

AMERICAN EDUCATIONAL MONTHLY.

VOL. II.—SEPTEMBER, 1865.—NO. 9.

THE STORY OF PETER PEDAGOGUS, A SWISS SCHOOLMASTER OF THE OLDEN STYLE.

CHAPTER I.

I AM a Swiss Protestant schoolmaster. On the 31st of July, 1836, I was standing at the front door of my humble cottage, when one of the police officials handed me a letter from the School Commissary. I was requested to call upon him at two o'clock precisely, as he had a communication to make me.

"Good," thought I, "he wants to tell me on what scale I have been rated, and what increase of stipend I am to expect." I almost leaped for joy, and would have given the messenger a batzen, had I happened to have one about me.

The Federal Council, at the suggestion of the Board of Education, had awarded, at one time, a sum of 40,000 Swiss francs, and, at another, a further sum of 50,000, for the purpose of subsidizing the schoolmasters. Inspectors had been roving about to find out who, on account of superior attainments, were entitled to a share in these grants. The examiners, sagacious well-informed men, went very courteously through their proceedings. I considered that I had come off very fairly indeed, and had often so framed my replies that they had nothing whatever to say to them. A peasant, who was present, agreed with me in supposing that I had undergone the ordeal beautifully.

The gold and silver apples hung close to our mouths, and we opened them wide—very wide—but they did not fall into them; they were reposing quietly in the state bank; and, though our desires had been

greatly excited, our sacks were still empty.

It may be imagined how overjoyed I was on receiving the letter. Like a child on new-year's morning, I ran to announce to my wife our good luck, which, however, I could only describe as an unknown quantity. Pressing her to put the last piece of meat into the soup, I said it would do her good, and that she might set her mind at ease as to the rest. Then I took my little pot of hot water for shaving, a part of which I spilled on my hand, and, with scalded fingers, made two or three gashes on my chin; but, as I actually vibrated with joy, I felt not the slightest pain, tranquilly covering the wounds with plasters of tinder.

This being Sunday morning, as I was precentor in the church by virtue of my office as schoolmaster, I went to the minister for the psalms. When the heart is full, the tongue is relaxed; and I spoke to his reverence of my anticipated elevation. The announcement seemed to afford him pleasure, a circumstance that astonished me; for we believed the clergy grudged us better pay, and that it was owing to them we had not long before had an increase of stipend. How this notion had entered into our minds, I do not exactly know; for, on the other side, I had often heard the farmers say they could never satisfy the clergy as to what they gave towards the schools and salaries of the schoolmasters.

At church the minister gave out the psalm in *mol*, which annoyed me greatly, as my spirits were too elated to sing in a

grave tone, and the organist moreover played unusually slow. I could not for the life of me keep the time in *mol*, and sang the hymn of praise according to the tone of my own heart, high and quick, as the blood sped merrily through my veins.

The result was a singular medley, which caused a good deal of talk, there being doubt as to who was to blame. I sang on in lively strain without observing that the organist was gradually falling behind me, though he sometimes looked angrily across his shoulder. That part of the congregation who happened to be in a good humor followed me, whilst those who had cares to trouble them lingered behind with the organist. The minister, no great hero in music, tried to keep pace, sometimes with the one and sometimes with the other. It was not till I arrived at the end of the psalm, and with my co-singers was silent, that I noticed the playing and singing still continued. Then I awoke from my day-dream, and stared in my turn at the organist with a look of surprise at his mistake; but he paid no attention whatever to my signals of displeasure.

What the subject of the minister's discourse that day was, I am unable to say; and you will perhaps pardon a poor schoolmaster for his shortcomings in this respect, when you reflect that he had only eighty Swiss francs a year, and five healthy children, but who now thought himself on the point of obtaining a share of 90,000. Oh! could you look into such a heart and behold how the pleasing anticipations crowd, and swarm, and throng, hurrying and devouring each other, in a manner scarcely conceivable! To form an idea of such a state of things, put a glass of vinegar, modern fashion, under a magnifying glass, and witness the world of animalculæ thronging about, annihilating and reproducing each other in never-ceasing activity. First come to the surface debts to be paid; these are swallowed by a thousand pressing necessities that present themselves in manifold variety, from deficiencies in the supply of children's stockings to the over-bed that wanted a new covering; in turn, these give way to a whole flood of wants that roll up dense and dark, overspreading the entire horizon of the thoughts.

Ah! the multitude of desires that spring up in the mind of a schoolmaster, with eighty francs a year and five children! How infinitely varied are the things he has had to do without, from a new pipe to that book which contains all that he might want and all that he might yet need to know!

I was quite frightened when the people rose up, for it was not till then I recollected being present at a sermon. Had I been asleep and set a bad example? Collecting myself, I joined devoutly in the prayer, and this time kept better pace with the organist.

At home, my wife had never seemed so slow in getting dinner ready; but never did I enjoy the meal better than this day. The good lady cast a doleful look at her last piece of meat, whilst I, merry as a cricket, was playing with the children. At last she said to me, "Peter dear, if I were you, I would not sell the hide till I caught the bear." I wiped my mouth, laughed at her, tied on my very best neck-cloth, and started off. Speeding on the wings of expectation, I was at the place of my destination long before two o'clock; but I could not then see the commissary, for he was still engaged examining the school-children.

The hearty dinner and the quick walk had made me thirsty, and excited a desire within me to take a drink, an inclination which, under ordinary circumstances, I should have repressed; for I hold it wrong in a man to indulge himself whilst his wife had to say to the children at home, when they ask for a slice of bread, "No, wait a bit, and you will have some potatoes." With the exception of six kreutzers left with my wife, I had all the ready-money we possessed, which consisted of four batzen and a half. That is not much; but still, I thought, a man who expected a share of 90,000 francs, might spare a chop-in out of it.

On entering the parlor of the inn, I noticed a number of people making merry in a private room; and before I had ordered my chopin, some one called out: "Hallo, Pedagogus, have a glass with me."

A schoolmaster, and one who has only four batzen and a half in his pocket, is not

very likely to demur at such an invitation; but he goes to see who offers it, and so did I. The speaker was an under-teacher, who, beaming with joy, sat at the head of a table addressing his guests as the giver of a feast. Ordering a chair to be brought for me, he asked me to sit down and help myself to whatever I liked. I had dined so well that I could not eat, but did not refuse a glass of wine, wondering all the time how a person in his position could behave in so extravagant a style.

From the appearance of the persons seated at the table, I judged that a christening was being celebrated. Calling to mind that the under-teacher had been married not long before, I concluded that he was now rejoicing over the advent of his first-born. The fool, thought I, fancies his baby to be the eighth wonder of the world, and is probably forming schemes and projects to secure for it at least the rank of a School Commissary. He does not seem to know that all fathers have the same opinion about their first boy; but the fifth or sixth materially alters the state of affairs; humbly and dolefully they then take the lowest seat at the table, and, on the appearance of the eighth or ninth, they feel inclined to slip under it altogether. I was not destined to remain long in ignorance as to the true cause of my host's exultation, and the reason why the best of every thing had been placed on the table.

"You are on your way to the commissary's, are you not?" said he. "Well, I wish he may have as good news for you as he had for me. I am in a rapture of delight. As we came out of church to-day, he told me I had been classed at 300 francs a year, and I thought on the reception of such gratifying news I might enjoy myself and friends a little."

I readily admitted that he was justified in so doing, and my own position seemed no longer black, but began to assume a pink and rosy hue; for, thought I, when such a stripling, who has scarcely escaped from his teens, and has had no sphere to test his capabilities beyond the Normal School, has been nominated to 300 francs a year—what ought not I to look forward to, who, besides being forty years of age,

had kept a school for nearly a quarter of a century and had commenced with very fair testimonials?

I could not get away until the hour of my appointment was long past. On leaving, I promised to look in as I returned and report my success; then with long strides I hastened to learn what estimate had been made of my abilities.

When I arrived, the commissary was walking up and down in front of his house, enjoying his afternoon whiff. Greeting me kindly, he expressed a hope that I had been put to no inconvenience; "for," said he, "you would be pretty sure to learn the news that I have to give you soon enough."

"That is a curious remark," thought I.

"Yes," he continued, "I am sorry for you and some others, that things have turned out as they have done. I can not comprehend what they are about at Berne; but such is always the way with people who imagine they possess infinite wisdom."

"The old gentleman is a little addlepated," thought I; "for, if the councillors at Berne who allowed 300 francs a year to our under-teacher by way of a beginning, have endowed me in any thing like the same proportion, that is as much wisdom as I could reasonably expect them to possess; it would be barefaced to look for more."

"What, then, Mr. Commissary, have they done?" I inquired. "Very likely they have acted to the best of their ability, and people such as we are easily satisfied; enough to keep away misery is all we want."

"Just so," rejoined the commissary, "and you will not have that for some time to come, I fear, if things go on as now. What you say is the reason why I regret to communicate to you the intelligence I have received. The authorities have not granted you an augmentation of salary, and have placed you in the class to which they can not allow a stipend of 150 francs. But on amending your qualifications, you are at liberty to make a fresh application; and, so far, you may consider yourself fortunate, for had you been a month older, at the date of your examination, you would

have been declared incapable of improvement."

On hearing this statement, I stood staring with open mouth, and for a time could neither shut it nor move my tongue. At length I managed to stammer out, "I hope things are not so bad as you say."

"Unfortunately," replied the commissary, "they are exactly as I have described them, and I can let you see the declaration in black and white, if such is your wish."

I would gladly have stayed, and vented my affliction there and then, and at the same time asked whether any thing could be done to alter the decision; but I observed that the old gentleman was as much pained as I was.

With heavy heart I moved disconsolately away. I did not keep the promise I had made to return and let the merry-makers know how I had fared. Who will blame me, if I did not choose to parade my disgrace before the under-teacher and his friends?

I would gladly have welcomed a sympathizing heart, into which I could have poured my sorrows. Heavily oppressed, I felt as if I were walking knee-deep in mud, and a sheathing of lead incased my members. Every man I met startled me, fearing he might see by my appearance that I was a schoolmaster who had been deemed unworthy of 150 Swiss francs a year.

To avoid a group of bowlers, I slunk into the shade of a pine wood, where every thing was as gloomy as my own thoughts. My distress rose up like a spectre before me, expanding and becoming more fearful as I advanced. Throwing myself down, I hid my face in the damp moss and wept bitterly, every thing within and around me seeming dark, woe-full, hopeless.

Ah, my fellow-creatures in adversity, should you desire that your tears may dry up, do not press your eyes on the bosom of the earth. Lift them upwards, thither where the sun shines, the stars sparkle like bright witnesses of the everlasting Light, that can transform sorrow into eternal joy. Those visible signs in the heavens affect the mind, and dispose it to cheerfulness and comfort.

Whilst brooding over my miseries the sun went down, and the stars were hidden behind the clouds. Thus, owing to the obscurity without and the darkness within, I could scarcely find my way.

The nearer I approached home the more downcast I became. What, thought I, would my wife say to the sad result? Should I at once confess what had transpired, or conceal it for a time?

I had not altogether concluded what to say when I arrived at the house.

Peeping in at the window, I saw the children ranged round the table singing a school-song, while their mother was sitting in the stove corner, with her head leaning down, so that I could not tell whether she wept or was asleep. This determined me to disguise the truth as long as possible, by giving equivocal answers and feigning cheerfulness.

Forcing a smile into my countenance, I entered the room with a bold "God grant you all a good evening!" The children started up, exclaiming "Good evening, father;" their mother, quickly drying her eyes, came forward, and saying, "You are late," sat down at the table, and then added, "I know you would like something warm, and I have got something for you."

In serving up the supper she asked no questions, but looked into my face, whilst I exerted myself to joke with the children; but I could not muster courage to say, "Mother, it has turned out badly." When the children had gone to bed, she sat down by my side and said, "Now, am I not right; you have been unsuccessful?"

I would not confess, but she absolutely refused to be deceived, asserting that she knew me too well to be mistaken in her impressions, and could tell by the first look whether I felt easy in mind. At last I had to communicate the misery I felt. She wept, and I tried to console her; but found I was in more need of consolation than she was. Indeed, our attempts to mitigate each other's sorrow only made the mutual grief more apparent. Next we tried to form projects, resolving to rise earlier and go later to rest; but on reckoning up, we discovered this would not much mend matters, for my hours of duty if increased would in no way augment the pay.

Next we thought of scattering our children amongst the good people who had promised to take charge of them. This scheme pained us both so much that it was not dwelt upon. After exhausting our stock of ideas, my wife remarked that it was late, and, as we were both tired, we should go to bed.

After commending ourselves to God, the suggestion was adopted. Sleep, my mother used to say, was the great ocean in which poor people drowned their miseries; true, they always came up to the surface again, but each time they were lighter. Sleep, however, I could not. Gloomy thoughts haunted me like evil spirits; a violent animosity arose within me against the people who had placed so low an estimate upon my attainments, and I felt strongly inclined to go to law with them, and obtain justice in that way. At last, however, sleep came, and put an end to these contemplations.

But it only changed the current of my thoughts; the phantoms of a vision took possession of my brain. I beheld the door gently open and give entrance to a well-known schoolmaster of the neighborhood. He was a quarrelsome fellow, short in stature, thin and wiry; his white hat thrust over his eyes, and a large porcelain pipe with a straight short stem in his mouth. Holding a long writing in his hand, he placed himself, with his turned-up nose, in the centre of the room.

"Peter," said he, "I dare say you have fared very much as I have. I passed for a learned man, always professed to be one, and people believed me. Now the examiners came and placed me in a lower class. I felt myself and the credit of the country injured by this proceeding. I thought the people would have risen and renounced their obedience, on account of my having been treated in such a scurvy manner. But no such thing; they are icicles and blockheads, afraid of the magistrates who are delighted at my disappointment—for I am a great deal too clever for them. Now I have drawn up a petition to the supreme council, which I know to be composed of patriotic men. I shall read it to you, for I want you to sign it."

The petition began by stating that the

Board of Education demoralized the people, allowed the teachers to starve, interfered with things they did not understand, and squandered away the schoolmaster's subsidies. Next it averred that the Government Council, by a treacherous silence, showed itself perfectly ignorant of the art of governing. Then came a variety of things about the clergy; how they alone were favored; and how it would be acting more wisely to pay teachers such salaries as the clergy had, since the former were of more service than the latter; adding that for aught the petitioner cared, they might transfer the stipends of the schoolmasters to the clergy. He (the petitioner) then spoke of the Superior Court, of the reactionary proceedings, and of a great many other things that I did not very clearly understand. Then came the conclusion, in which he demanded that the Grand Council should appoint a commission to bring the accused authorities to trial, and craved the councillors meanwhile to suspend the Superior Court, the Government Council, and the Educational Board from all their functions, so that no further mischief might ensue.

When he finished reading, he began to search for pen and ink, so that I might sign the document.

At this moment another figure glided forward from a corner of the room. How it had got in, I know not. It was that of a lean man, with a red face and remarkable nose. In one hand it held a good-sized cake, and in the other a bottle. It stood behind the schoolmaster, and shook its head very vigorously, making a variety of contemptuous movements with the cake, and at last began to speak, but in such a way that the other did not hear a word.

"Pedagogus," began the figure, "I have heard of your disappointment, and have come to condole with you. Behold this bottle. It contains old apple brandy of 1834, that will always refresh you, and the bottle will never get empty. Do not listen to that envious fellow there; envy is but a sorry passion at the best. As for railing against the clergy, disappointed men are very apt to do that. There are, no doubt, covetous, bigoted, ignorant men in the Church; but, if the examiners have

rated you too low, and others too high, they alone are to blame—not the clergy, the Superior Court, the Government Council, or the Board of Education. Nevertheless there is good fortune in store for you yet. A time will come when presents will be showered upon you, like manna in the desert. Coming home, your knapsack will be always full, and you will be able to feed your children like young ravens in the brook. Many a joy you will possess. You will be extolled over mountain and valley; ladders will be placed against your chimney, and hams and sausages will abound in your kitchen; all your miseries will be at an end. Therefore be of good cheer, and eat a slice of my cake, and drink a glass of my brandy, instead of signing envious petitions.”

Meantime the schoolmaster, who had struck a light, lit his pipe, and found the pens and ink. Advancing toward me, he presented the petition for my signature, just as the other handed me a glass of his brandy; and there I lay, doubtful which to accept.

I wavered between the two like a reed in the blast. I could not well refuse to sign the petition of the little schoolmaster, for, small as he was, I feared him. Yet I was reluctant to append my signature; for I knew that the little man might, in the end, have himself and all concerned with him hung, particularly if the parties he was petitioning against remained masters. Then the apple-brandy and the cake were inviting. What could I do? Flesh and blood inclined me to yield to the eating and drinking—yet I hesitated.

The two tempters had drawn nearer and nearer, the schoolmaster stretching forth

the paper in one hand, and holding his pipe with the other; whilst his opponent, holding the glass and the cake, pressed his bottle to his breast. Adopting a middle course, I held my hand tremblingly for the paper, and shoved my mouth toward the brandy. This brought the two into contact, they touched each other, started back and stared at each other, as if doubtful how to act. Advancing again toward me, the little one wielded his pipe as a shield against the foe, and the other prudently covered himself with his bottle.

Not wishing to offend either, I continued passive. They, seeing that I was not likely to decide the contest, entered into a desperate struggle. I felt the paper thrust into my hand by the one, and the fiery fluid poured down my throat by the other. The pipe and the bottle were smashed in the conflict; both the combatants, falling upon my body, weighed me down, as if a rock were resting on my breast. In their rage, the one thrust some of the cake into my mouth, and the other did the same with his petition. Being thus nearly choked, my senses left me.

I awoke, bathed in perspiration. My wife, finding me trembling and moaning, had roused me. My body seemed bruised all over, and it being morning, I got up, but was even more dejected than on the evening before.

Seeing my mental depression, it occurred to my good wife to send me to the residence of a friend, that he might cheer me. This learned and eccentric friend whom I visited, persuaded me to write the chapters which will follow. I trust they will interest and profit my fellow teachers in America.

MEANS OF MENTAL DEVELOPMENT.

A CONTRIBUTOR in a late number of the MONTHLY said, “Human intelligence may be developed by two methods—by classical learning, and the mathematical studies; good educational instruction re-

quires both.” This proposition asserts that all mental *culture* comes from two branches alone. Other studies, the writer would perhaps grant, are very well for other purposes—as, for example, the study of natural

science, history, etc.—but are nothing worth in the discipline and development of the mental powers.

Now, preposterous as this proposition is, in this form, it is very widely received and acted upon by those who are engaged in education. The plan of education in our schools and colleges is almost universally built upon this dogma. Look for a moment at our colleges. When a young man is examined for admission, the examination is only in relation to language and mathematics, and not a question is asked in regard to the natural sciences. Any knowledge of them is considered superfluous so far as concerns his being fitted for his college course. Then after he enters college he is drilled in the same two branches through two long years; and in the last two years of his course he is taught, but from the circumstances of the case very inadequately, in some of the natural sciences. All this, which I know to be strictly true of some colleges, is, so far as I have learned, true, in the main at least, of the colleges generally in our country.

The result is, that the graduates of our colleges fall far short of obtaining such a knowledge of the natural sciences as should be possessed by any one who appears before the community in the character of a well-informed man.

Of course, from the influence of the colleges upon the general system of education, the same exclusion of natural science is practised in the schools, not only those which are preparatory for the college course, but in others also. Here and there we find an exception, but for the most part the dogma of the colleges as yet prevails.

This exclusion of natural science from the early part of education is based upon two false ideas—the one already mentioned, and the idea that natural science cannot be intelligently studied by very young persons. The short space of an article will permit only the throwing out of some hints concerning the former.

No one can dispute the general statement, that *the act of acquiring knowledge of any kind has an influence in developing the powers of the mind*. In other words, putting the mind into action strengthens

and develops it, as muscular exercise strengthens and develops the body.

We advance another step. *Exercising the mind on some subjects develops the mental powers more than exercising it on other subjects*. The general rule on this point is, that the subject which awakens the most activity in the mind is the most valuable in this respect. Tried by this rule, natural science can not be put upon an inferior level. Every one will admit at once that its investigations call forth quite as much mental effort as the study of language. How is it now as compared with mathematics? Are not some of its grand conclusions capable of arousing the mind to as high and extended flights of thought as any of the greatest of mathematical solutions? Indeed, do not the mathematics derive their highest interest from their application to natural science, and thus show that the two are fitted to go hand in hand together in “developing human intelligence?”

We go a step still further. *In developing the mind each branch of study has its peculiar province*. It is manifest to every one that the mind in the study of mathematics is brought into a state of action different from that which occurs when it is studying language. The same is obvious in a comparison with the study of natural science. For a full and systematical development of mind, then, different branches of study are required. If any one be pursued to the exclusion of the rest, there will be an unsymmetrical, a distorted development. This is often seen in the influence of an undue prominence of mathematical study. This study serves to give definiteness to mental action, but fails to secure that range of action which is required in most of the circumstances in which the mind is called to act in life. In other words, while it gives strength and clearness, pursued alone it shuts up to such strictness that it inevitably narrows the mind. This is often seen. A man may have the most thorough and extensive mathematical training, and from the possession of mathematical genius may arrive at great eminence; and yet he may be, in the ordinary sense of the term, a poor reasoner—poor at making an argument—poor at arriving at such conclusions as must be

formed in the every-day business of life. Other training is needed here in connection with the mathematical. The study of language will partly supply the deficiency. But I know of no study which will do so much in this respect as the study of natural science, for this introduces the mind to a wide observation of various facts. It is the grappling with facts that not only gives to mental action an eminently practical character, but liberalizes and elevates it by the wide range of phenomena open to us in nature.

Much of the reasoning used in natural science and on ordinary subjects, it should be observed, is not strictly mathematical. Mathematical reasoning has to do with few points, and is, in a certain sense, simple. But many of the reasonings in natural science take in a large range of points, some of them often mere analogies, and are therefore very complex in their character. The same can be said of the reasonings upon which much of human action is based in business, politics, etc. If the strictness, not to say narrowness, of mathematical reasoning were to be applied in such cases, much of what we now consider settled must be marked as not proven, and doubt and uncertainty must everywhere be introduced.

It is what are called the observing powers that are most prominently cultivated in the study of natural science. And here let it be distinctly understood what I mean by observation. I do not mean the bare collection of facts through the action of the senses. Observation implies thought guiding the collection of the facts and making out their relations. It therefore implies reasoning in connection with the action of the senses. A good observer is a good reasoner, and is not a mere fact-hunter. Premising this, I remark that one of the chief aims of education should be to cultivate this observation. This is the basis of success in life—a true success. It is what makes the *well-informed* man, and fits him for the varied exigencies that may arise in his course.

One means of cultivating this observation is found in the study of natural science, for it supplies from earth, air, and water an abundance of facts to call forth

the action of the observing powers. But to secure the result, the study must be pursued aright. The chief object of instruction should not be, as it often is, to load the memory with the technicalities and hard names of science. The teaching of facts and simple fundamental principles should be the prominent object throughout, while the technicalities and terminology should be kept in the background, should not be introduced at all at the outset, and should be brought out gradually, even cautiously, as the pupil advances in his course of instruction. As an illustration of the wrong way of teaching natural science I would mention the common mode of teaching botany. The classification of plants is made the chief thing, while the interesting facts and principles of vegetable physiology, which should constitute the body of the study, are very much left out of view.

Adopting the plan thus indicated, natural science can be taught throughout the whole course of education, beginning with the child as soon as he learns to read; for there are phenomena all around us which can be made intensely interesting to the child; and the teaching of these facts, accompanied with such explanations as he can comprehend, is really teaching the beginnings of science. Much of what is called object-teaching can be made to assume this form.

Important as it is that the observing powers should be cultivated, not only is there a failure to do it in education, as it is commonly pursued, but the action of these powers is actually repressed, especially in the earlier part of the course. The child is alive to see all that is around him, and is full of inquiries about the phenomena that he witnesses. He is an observer, or in other words, a young philosopher. He is in an attitude of mind to learn a great deal, and will do so if he be taught aright. But subjected to the drudgery of rote-learning in the schoolroom, and practically given to understand that observation is no part of education, but that learning consists in spelling, reading, committing to memory words and forms of expression, and ciphering, he gradually gives up what the teacher would call his troublesome

inquisitiveness. This unnatural course has so much influence, that it is a general fact that children are not as good observers at twelve years of age, as they are at eight and nine.

The discussion of these points would make this article too long. In conclusion, let it be stated, that there are indications of change in the general plan of education, looking to the setting aside of the humdrum

drudgery of rote-learning, and the introduction of the study of things in place of the mere memorizing of words and forms. This is the grand reform that is needed, and we never shall realize fully what education is, until natural science is put on a level with the study of language and of mathematics, and, like them, is taught in proper gradations, from the outset of education throughout its whole course.

PEDAGOGICAL LAW.

II.

THAT teachers may understand the general feeling, as well as the law, on the important subject of corporeal punishment, we will cite the opinions of the courts, using in every instance the identical language in which they were delivered.

1. When the Hon. John A. Dix was Superintendent of Schools for the State of New York, he gave the following as his opinion: The practice of inflicting *corporeal punishment* upon scholars, *in any case whatever*, has no sanction but usage. The teacher is responsible for maintaining good order, and he must be the judge of the degree and nature of the punishment required when his authority is set at defiance. At the same time he is liable to the party injured for any abuse of a prerogative *which is wholly derived from custom*. (*Supt. Common Schools Decisions*, 102.)

2. *The authorities all one way*.—The Supreme Court of Indiana expresses its regret as follows: The law still tolerates corporeal punishment in the schoolroom. The authorities are all that way, and the Legislature has not thought proper to interfere. The public seems to cling to a despotism in the government of schools which has been discarded everywhere else. Whether such training be congenial to our institutions, and favorable to the full development of the future man, is worthy of serious consideration, though not for us to

discuss. In one respect the tendency of the rod is so evidently evil, that it might, perhaps, be arrested on the ground of public policy. The practice has an inherent proneness to abuse. The very act of whipping engenders passion, and very generally leads to excess. Where one or two stripes only were intended, several usually follow, each increasing in vigor as the act of striking inflames the passions. This is a matter of daily observation and experience. Hence the spirit of the law is, and the leaning of the courts should be, to discountenance a practice which tends to excite human passions to heated and excessive action, ending in abuse and breaches of the peace. Such a system of petty tyranny cannot be watched too cautiously, nor guarded too strictly. The tender age of the sufferers forbids that its slightest abuse should be tolerated. So long as the power to punish corporeally in schools exists, it needs to be put under wholesome restrictions. Teachers should, therefore, understand that whenever correction is administered in anger or insolence, or in any other manner than in moderation and kindness, accompanied with that affectionate moral suasion so eminently due from one placed by the law "*in loco parentis*"—in the sacred relation of parent—the court must consider them guilty of assault and battery, the more aggravated and wanton in proportion to the tender years and dependent position of

the pupil. It can hardly be doubted but that public opinion will, in time, strike the ferule from the hands of the teacher, leaving him as the true basis of government, only the resources of his intellect and heart. Such is the only policy worthy of the State, and of her otherwise enlightened and liberal institutions. It is the policy of progress. The husband can no longer moderately chastise his wife; nor, according to the more recent authorities, the master his servant or apprentice. Even the degrading cruelties of the naval service have been arrested. Why the person of the school-boy, "with his shining morning face," should be less sacred in the eye of the law than that of the apprentice or sailor, is not easily explained. It is regretted that such are the authorities—still courts are bound by them. All that can be done, without the aid of legislation, is to hold every case strictly within the rule; and if the correction be in anger, or in any other respect immoderately or improperly administered, to hold the unworthy perpetrator guilty of assault and battery. The law having elevated the teacher to the place of the parent, if he is still to sustain that sacred relation, "it becomes him to be careful in the exercise of his authority, and not make his power a pretext for cruelty and oppression. (14 Johns. R., 119.) Whenever he undertakes to exercise it, the cause must be sufficient; the instrument suitable to the purpose; the manner and extent of the correction, the part of the person to which it is applied, the temper in which it is inflicted—all should be distinguished with the kindness, prudence, and propriety which become the station. (Cooper v. McJunkin, 4 Indiana R., 290.) This court has more sympathy for roguish youths, and less for hectoring teachers than any other, we believe, in the land. To our mind the reason why the law gives the teacher the right to punish is very clear and easily explained, but it does not seem to be so to this court.

3. *The teacher to have the benefit of any reasonable doubt.*—The Supreme Court of Vermont recently gave a very able opinion on this subject, from which we extract the following: A schoolmaster has the

right to inflict reasonable corporeal punishment. He must exercise reasonable judgment and discretion in determining when to punish and to what extent. In determining upon what is a reasonable punishment, various considerations must be regarded—the nature of the offense, the apparent motive and disposition of the offender, the influence of his example and conduct upon others, and the sex, age, size, and strength of the pupil to be punished. Among reasonable persons much difference prevails as to the circumstances which will justify the infliction of punishment, and the extent to which it may properly be administered. On account of this difference of opinion and the difficulty which exists in determining what is a reasonable punishment, and the advantage which the master has by being on the spot to know all the circumstances, the manner, look, tone, gestures of the offender (which are not always easily described), and thus to form a correct opinion as to the necessity and extent of the punishment, considerable allowance should be made to the teacher by way of protecting him in the exercise of his discretion. Especially should he have this indulgence when he appears to have acted from good motives, and not from anger or malice. Hence the teacher is not to be held liable on the ground of excess of punishment, unless the punishment is clearly excessive, and would be held so in the general judgment of reasonable men. If the punishment be thus clearly excessive, then the master should be held liable for such excess, though he acted from good motives in inflicting the punishment, and, in his own judgment, considered it necessary and not excessive. But if there is any reasonable doubt whether the punishment was excessive, the master should have the benefit of that doubt. (Lander v. Seaver, 32 Vermont R., 123; 19 Ib., 108; 4 Gray, 37; 2 Dever. and Bat., 365; 3 Salk, 47; Reeves' Domestic Rel., 374, 375; Wharton's Amer. Crim. Law, 1,259; and 1 Sanders on Pl. and Ev., 144.)

4. The Supreme Judicial Court of Massachusetts are of the opinion that a ferule is a proper instrument of punishment. In the case in which this decision was ren-

dered, there was evidence that the pupil disobeyed a proper rule of school, which had been published by the defendant to the school in her presence. The defendant introduced evidence to show that the pupil was obstinate, told falsehoods, and was insolent before and during the time of punishment; and alleged that it was for all these faults that he inflicted the punishment. There was also evidence tending to show that the punishment was not very severe till after the pupil had replied to him with insolent words and manner; and it was proved that the defendant ceased punishing when the pupil acknowledged her fault, asked forgiveness, and promised to behave better. The defendant asked the judge to instruct the jury "that a school-teacher is amenable to the laws, in a criminal prosecution for punishing a scholar, only when he acts *malo animo*, from vindictive feelings, or under the violent impulses of passion or malevolence; that he is not liable for errors of opinion or mistakes of judgment merely, provided he is governed by an honest purpose of heart to promote, by the discipline employed, the highest welfare of the school, and the best interests of the scholar; that he is liable in a criminal prosecution, for punishing a scholar, only when the amount of punishment inflicted is more than adequate to subdue the scholar and secure obedience to the rules of the school." The judge did not instruct the jury as requested, but instructed them "that a teacher had a right to inflict corporeal punishment upon a scholar; that the case proved was one in which such punishment might properly be inflicted; that the instrument used (a ferule) was a proper one; that, in inflicting corporeal punishment, a teacher must exercise reasonable judgment and discretion, and must be governed, as to the mode and severity of the punishment, by the nature of the offense, and by the age, size, and apparent powers of endurance of the pupil; that the only question in this case was whether the punishment was excessive and improper; that if they should find the punishment to have been reasonable and proper, the defendant could not be deemed guilty of an assault and battery; but if,

upon all the evidence in the case, they should find the punishment to have been improper and excessive, the defendant should be found guilty." The jury returned a verdict of guilty, and exceptions having been taken by the defendant to the foregoing charge of the judge, the case was afterwards argued before the appellate court, where the charge of the judge was declared to be correct. (*Commonwealth v. Randall*, 4 Gray, 37.)

5. *A lady teacher in trouble.*—This was an indictment for assault and battery. The defendant, Rachel Pendergrass, kept a school for small children, and punished one of them with a rod to such an extent as to leave marks, all of which were such as were likely to pass away in a short time and leave no permanent injury. The judge instructed the jury that if they believed that the child (six or seven years of age), had been whipped by the defendant at that tender age, with either a switch or other instrument, so as to produce the marks described to them, the defendant was guilty. The jury under this charge returned a verdict of guilty; but Rachel took exceptions to the charge, and the case was afterwards argued in the higher court, in which the following opinion was delivered for that gallant court by Judge Gaston: It is not easy to state with precision the power which the law grants to schoolmasters and teachers, with respect to the correction of their pupils. It is analogous to that which belongs to parents, and the authority of the teacher is regarded as a delegation of parental authority. One of the most sacred duties of parents, is to train up and qualify their children for becoming useful and virtuous members of society; this duty cannot be effectually performed without the ability to command obedience, to control stubbornness, to quicken diligence, and to reform bad habits; and to enable him to exercise this salutary sway, he is armed with the power to administer moderate correction when he shall believe it to be just and necessary. The teacher is the substitute of the parent; is charged in part with the performance of his duties and in the exercise of these delegated duties is invested with his power. The law has not under-

taken to prescribe stated punishments for particular offenses, but has contented itself with the general grant of the power of moderate correction, and has confided the graduation of punishments, within the limits of this grant, to the discretion of the teacher. The line which separates moderate correction from immoderate punishment can only be ascertained by reference to general principles. The welfare of the child is the main purpose for which punishment is permitted to be inflicted. Any punishment, therefore, which may seriously endanger life, limbs, or health, or shall disfigure the child, or cause any other permanent injury, may be pronounced in itself immoderate, as not only being unnecessary for, but inconsistent with, the purpose for which correction is authorized. But any correction, however severe, which produces temporary pain only, and no permanent ill, cannot be so pronounced, since it may have been necessary for the reformation of the child, and does not injuriously affect its future welfare. We hold, therefore, that it may be laid down as a general rule, that teachers exceed the limits of their authority when they cause lasting mischief; but act within the limits of it, when they inflict temporary pain. When the correction administered is not in itself immoderate, and, therefore, beyond the authority of the teacher, its legality or illegality must depend entirely, we think, on the *qui animo* with which it was administered. Within the sphere of his authority, the master is the judge when correction is required, and of the degree of correction necessary; and like all others intrusted with a discretion, he cannot be made penally responsible for error of judgment, but only for wickedness of purpose. The best and the wisest of mortals are weak and erring creatures, and in the exercise of functions, in which their judgment is to be the guide, cannot be rightfully required to engage for more than honesty of purpose, and diligence of exertion. His judgment must be *presumed* correct, because he is the judge, and also because of the difficulty of proving the offense, or accumulation of offenses, that called for correction; of showing the peculiar temperament, disposition, and

habits of the individual corrected; and of exhibiting the various milder means that may have been ineffectually used before correction was resorted to. But the master may be punished when he does not transcend the powers granted, if he grossly abuse them. If he use his authority as a cover for malice, and under pretense of administering correction gratify his own bad passions, the mask of the judge shall be taken off, and he shall stand amenable to justice, as an individual not invested with judicial power. We believe that these are the rules applicable to the decision of the case before us. If they be, there was error in the instruction given to the jury, that if the child was whipped by the defendant so as to occasion the marks described by the prosecutor, the defendant had exceeded her authority and was guilty as charged. The marks were all temporary, and in a short time all disappeared. No permanent injury was done to the child. The only appearances that could warrant the belief or suspicion that the correction *threatened* permanent injury, were the bruises on the neck and the arms; and these, to say the least, were too equivocal to justify the court in assuming that they did threaten such mischief. We think that the instruction on this point should have been, that unless the jury could clearly infer from the evidence, that the correction inflicted had produced, or was in its nature calculated to produce, lasting injury to the child, it did not exceed the limits of the power which had been granted to the defendant. We think also, that the jury should have been further instructed, that however severe the pain inflicted, and however, in their judgment, it might seem disproportionate to the alleged negligence or offense of so young and tender a child, yet if it did not produce or threaten lasting mischief, it was their duty to acquit the defendant; unless the facts testified induced a conviction in their minds that the defendant did not act honestly in the performance of duty, according to her sense of right, but under the pretext of duty was gratifying malice. We think that rules less liberal toward teachers can not be laid down without breaking in upon the authority necessary

for preserving discipline, and commanding respect, and that although these rules leave it in their power to commit acts of indiscreet severity with legal impunity, these indiscretions will probably find their check and correction in parental affection and in public opinion; and if they should not, that they must be tolerated as a part of those imperfections and inconveniences which no human laws can wholly remove or redress. (*The State v. Pendergrass*, 2 *Deer. and Bat. R.*, 355.)

6. It is undoubtedly true that in order to support an indictment for assault and battery, it is necessary to show that it was committed *ex intentione*, and that if the criminal intent is wanting, the offence is not made out. But this intent is always inferred from the unlawful act. The unreasonable and excessive use of force on

the person of another being proved, the wrongful intent is a necessary and legitimate conclusion in all cases where the act was designedly committed. It then becomes an assault and battery, because purposely inflicted without justification or excuse. Whether, under all the facts, the punishment of the pupil is excessive must be left to the jury to decide. (*Commonwealth v. Randall*, 4 *Gray*, 38.)

7. Whether the instrument used by the teacher, for the punishment of a pupil, was a proper one, is for the jury to decide, in consideration of all the circumstances of the case. Evidence that the same kind of instrument was used in other schools in the vicinity will rebut the charge of malice, by showing that the teacher did not resort to an unusual instrument. (*Lander v. Seaver*, 32 *Vermont R.*, 125.)

EARLY THEORIES CONCERNING THE EARTH.

FROM the most ancient times, the energies of philosophers have been expended on investigations of the geography and astronomy of our globe. Theories of every character, varying from mere puerility to the most profound reasoning, have been offered to account for its phenomena. To these speculations especial interest is attached, not only because of their relation to pure science, but also because they illustrate the gradual development of the human mind. In the earlier ages, theories were mere fanciful conceptions. Hypotheses, offered for the explanation of natural occurrences, were supported only by dogmatic assertion, or abstract metaphysical reasoning. Careful inquiries into facts, and searching investigations of causes were unknown. But when we pass from the mythological story of Atlas upholding the heavens, to the grand discovery of gravitation by Newton, we find that, in later days, mere theories, the offspring of an untutored and unre-

strained imagination, are no longer received, and that metaphysics are no longer employed to breed confusion in natural science. We are struck, too, by the complete emancipation from that ancient religious bondage, or rather intolerance, which fettered science, by denouncing as atheists and threatening with loss of life all those whose abler intellects shook off the trammels which bound their contemporaries. With the perfecting of mechanical ingenuity and the increased knowledge of mathematics, together with the greater opportunity and desire for investigation, scientific determinations have become more exact; and now, by the term theory we no longer understand a fanciful conception, but rather the influence deduced from an accurate comparison of facts obtained by careful research. Instead of the besotted superstition which once prevailed, exercising its pernicious influence upon every action of the mind, we find an almost universal incredulity, which readily

rejects every scientific hypothesis not fully borne out by facts.

As appears from what has been said, these theories form one of the most interesting chapters in the history of the human intellect. A brief review of them therefore can not fail to be interesting and instructive. We shall briefly examine the more prominent theories which have been advanced respecting the geography, astronomy, and cosmogony of our planet.

EARLY GEOGRAPHY.

The earliest system of geography on record is found in the writings of Homer. That author regarded the earth as a flat oval body of very limited extent, surrounded on all sides by a mighty river, called Ocean. This system was universally received until Thales, about six centuries before Christ, asserted that the earth was a sphere. This view was adopted by the Pythagoreans, but, being unsupported by observations, was accepted by very few, and was soon forgotten. Plato afterwards taught that the world was composed of twelve pentagons, while Anaximander maintained that the form was that of a cylinder. At length, as commerce extended, the spherical form of the earth was demonstrated, and has been accepted without cavil since the first century of the Christian era. Perhaps the most extravagant reverie ever presented, concerning the earth's form, was that of Captain Symmes, who some forty years ago advanced the theory that the earth is a hollow sphere, whose interior is inhabitable or at least accessible by openings at the poles. This enthusiastic officer actually sought opportunity to explore the polar regions to test the truth of his hypothesis, which was called the "American theory."

At a very early period attempts were made to ascertain the circumference of the earth. Aristotle says that, in his time, it was believed to be 400,000 stadia. Eratosthenes' calculations gave only 250,000 stadia (probably about 31,500 Roman miles, for we are uncertain as to the length of the stadium used); while another observer could only obtain 240,000,—and this result was reduced, by subsequent calculations,

to 180,000 stadia. The first results approaching accuracy were obtained by Snellius, a Hollander, who in 1615 measured off an arc of a meridian by triangulation, and so gained an approximate result. Maupertius afterwards used the same method of measurement, and calculated as the distance 25,000 miles, which varies very slightly from the length of a meridian as now determined.

Among the ancient Greeks geographical knowledge was very limited. According to their system, the earth terminated on the north by the imaginary Rhipæan mountains, inhabited by the Gorgons; on the west by the Pillars of Hercules, or Straits of Gibraltar; on the south by Ethiopia; and on the east by the Euxine or Black Sea. Beyond these limits flowed the mighty river Ocean. At the extreme north, or "Thule," there dwelt, in darkness, the Cimmerians, a fabulous race; while underneath, in the cavern of Tartarus, the Titans, foes to the gods, lived in a never-ending night.

The earliest recorded attempt at enlarging geographical knowledge was made by Pharaoh Necho, king of Egypt, who, about 600 B. C., dispatched an expedition down the Red Sea for this purpose. The fleet sailed around Africa, and coming northerly reached the Pillars of Hercules, through which it returned to Egypt by the Mediterranean. Herodotus doubted the history of this expedition, from the fact that, during a portion of the voyage, the sun was at the south, while again it was at the north of the explorers. This observation, however, when examined by the light of modern discoveries, affords the strongest possible proof that the expedition actually sailed in those regions. In the fifth century B. C. Hanno sailed from Carthage, and explored the whole coast of Europe as far north as Britain; and afterwards the conquests of Alexander extended the boundaries of the known earth toward the east.

It was not until within two centuries B. C. that any attempt was made to found a scientific system of geography. About that time Eratosthenes, a Grecian philosopher, offered his celebrated theory. He conceived a line, nine thousand miles long,

drawn east and west through those places whose longest day was fourteen and one-half hours, which was crossed perpendicularly by another line, five thousand miles long, running north and south. The extremities of these lines marked the limits of a belt, five thousand by nine thousand miles, which included all the inhabitable portions of the globe. Beyond these limits was an impassable ocean of unknown extent, but which, the shrewd speculator conceded, might possibly contain some islands or continents. About one hundred years later, Strabo wrote his renowned geography, a work which has been justly admired in all ages for its purity and elegance of style. While this author adopted many of the views of Eratosthenes, he far excelled that writer in accuracy of description. His work, however, was reliable only concerning the coasts about the Mediterranean, as it contains many erroneous statements concerning Africa and Western Europe.

THE FIRST MAPS.

The honor of producing the first map was reserved for Hipparchus, the astronomer, who lived about a century and a half B. C. He was the first who applied lines of latitude and longitude to the marking out of relative distances. Ptolemy, who lived about 120 A. D. and was distinguished alike as geographer and astronomer, produced a work on geography, which though in many respects exaggerated, was far superior to any of its predecessors. This work, and the map which accompanied it, were, in the main, accepted as perfectly reliable until the beginning of the sixteenth century, when several important errors in latitude were discovered, which rendered a thorough correction of the map necessary.

PROGRESS OF DISCOVERIES.

Little progress was made in geographical science for nearly fourteen centuries. Few discoveries were made; only Iceland, the Azores, and the Canaries on the west, and equally insignificant lands on the east, had been added to the map. True, the hardy voyagers of the north had explored the coasts of America as far south as Long

Island, and had established colonies in Greenland and New England; but before the end of the eleventh century the colonies had perished, and, by the time of Columbus, had entirely passed from the minds of men. Africa was yet, as indeed until within one hundred years of our own time, a true *terra incognita*. The most extravagant and fabulous reports prevailed concerning its inhabitants. Men and animals of gigantic size and shadowy form peopled its vast deserts, while monsters of hideous deformity existed in its southern borders.

Towards the close of the fifteenth century the travels of Marco Polo in the East attracted attention, and drew men once more to the consideration of geographical questions. About this time, strange timbers floated from the west upon the Azores, and the bodies of two men, from the same direction, drifted about in the currents until they were thrown upon the Canary shores. Men were already eagerly seeking some shorter passage to the Indies than the tedious route which doubled the Cape of Good Hope. Convinced of the sphericity of the earth, and influenced by the occurrences just mentioned, Columbus, the great admiral, concluded that, by sailing westwardly, he could reach the Indies in a much shorter time than by any other route. His efforts were crowned with success, and his discovery of the Western Continent opened the only way by which we could attain to a true system of geography.

Since the discovery of America geographical science has advanced with great rapidity. We are no longer compelled to theorize concerning unknown countries, and our maps are no longer disfigured by yellow blanks, marked "unexplored regions," for all have been in a measure described. Those problems of the ancients, the sources of the Nile and Niger, have been solved by the intrepid explorers of this century. Ethiopia has been as thoroughly explored by Livingston, Burton, and Barth, as China or India by others; the islands of the Pacific and even the lands about the poles have been marked out and named. Maps are now in every house, and the child of twelve years knows more of our globe than

did the wisest philosopher of Greece or Rome in the days of our Saviour or at the fall of the Roman empire.

THE EARLY ASTRONOMY OF THE EARTH.

The most primitive system of astronomy was that of appearances, which placed the earth in the centre of the universe, and regarded all the other heavenly bodies as revolving about it once in twenty-four hours. This was the system maintained by the ancient Egyptians and Chaldeans, and afterwards modified by Ptolemy. The first theory on record differing essentially from this was that of Pythagoras, who, in all probability, received it from the Egyptian priests during his travels through their country.* This philosopher held that, as the sun was fire, and therefore the most dignified object in the universe, it occupies the center, and the earth revolves about it once in a year. Diogenes Laertias says that Philolaus, a disciple of Pythagoras, endeavored to explain the apparent revolution of the heavenly bodies, by assuming a diurnal rotation of the earth. This hypothesis throughout resembled very much that of Copernicus, propounded nearly twenty centuries later, but was encumbered with so great a mass of rubbish, and was so repugnant to the received views, that, being supported by no natural authority, it soon passed from the memory of men. So soon indeed, that in a work recounting the varied astronomical theories previously given, published about the beginning of our era, no mention is made of that of the Pythagoreans, although the doctrines of that school had been fully set forth by Aristarchus only two centuries and a half before.

The next theory which claims our attention is the Ptolemaic; so termed from its author, Claudius Ptolemæus, a Roman geographer and astronomer, who lived under the emperors Adrian and Antoninus. This speculator believed that the earth is

in the center of the universe, and that around it the heavenly bodies moved in the following order of distance—the moon, Venus, sun, Mars, Jupiter, Saturn, and the fixed stars; above these are two spheres forming the crystalline heavens; beyond these is the *primum mobile*, which in some mysterious manner revolves once in twenty-four hours, and carries with it the heavenly bodies. Outside of all, and surrounding them, was the *cælum empyreum*, or abode of spirits. This theory was apparently so simple, and so perfectly in accordance with natural appearances, that, notwithstanding the many inconsistencies and even gross contradictions in the system, it retained ascendancy over all others for upwards of fourteen centuries.

During this long period investigations were continued. Discoveries of peculiar planetary motions were made, many of them exceedingly difficult of explanation by the Ptolemaic theory. Additions to it were constantly made, until at length the system became so excessively cumbrous and complicated that a conceited king of Spain once remarked, "Had I been of God's council when he made the heavens, I could have taught him how to mend his work." About the end of the fifteenth century, Nicholas Copernicus, a Polish canon, becoming convinced of the incompetency of the accepted system, began anew the investigation of the heavenly bodies. Nineteen years of intense labor resulted in that greatest and complete system which bears his name, and, with few changes, is now received throughout the civilized world.

This system, as now maintained, makes the sun the center around which the planets revolve, in set periods, in elliptical orbits, attended by the satellites, which in turn revolve about their primaries. Copernicus did not live to complete his labors. He was so opposed and hampered by the bigoted prelates of his age, that his great work, "*De Orbitus Celestium*," was suppressed, and he received the first copy of it only on his death-bed.

(To be continued.)

* Mr. Lewes doubts this, but the presumptive evidence is so strong that we accept it.—*Editor.*

FRENCH NOVELTIES IN EDUCATION.

A PATRIOTIC educationist, in an address to "la belle France," suggests that, outside every town-hall throughout the empire, there should be tables exhibiting the names of famous kings, poets, and heroes, and inscriptions of the most remarkable events that have happened in the neighborhood. He would turn the walls of railway stations and waiting-rooms to account, covering them with the names of the largest towns, the principal ruins and monuments, and the most famous spots in the vicinity; and with indications of the prevailing industry of the district, its geological character, and the like. He believes that the "odds and ends of time," now wasted in front of the town-hall, and in railway stations and waiting-rooms, would thus be turned to account; and, by way of proof, urges a consideration of the fact that, around the large colored railway maps, affixed to the walls of some railway stations, there is generally a group of students, composed, for the most part, of workmen.

We would be glad to believe that something of the kind might be undertaken here. If on the City Hall barracks, and the new Court-house fence, and the ferry-slips of the metropolis, we were to substitute a view of Niagara Falls, and statistics of the construction of Suspension Bridge, in place of glaring notices of Plantation Bitters and the cabalistic S. T.—1860—X., the change would certainly have no disastrous effect on Young America, and might possibly have some beneficial result in an esthetic point of view. Our parks and thoroughfares would, doubtless, be no less advantageous to our fashionable belles, if they were there occasionally forced to read some botanical statement, or acquire some fact in natural history, instead of being constantly reminded of the questionable benefits of "ambrosial" balsams, and compelled to undergo an interminable orthographic discipline, in the necessity of a constant spelling of "Sozodont" and "Kathairon."

Three other gentlemen, petitioning the Senate, make less feasible proposals. One

of them, impatient to see all the provincial *patois* die before himself, prays the Senate to require that no teacher shall allow a pupil to utter a word that is not French, and that only French expressions shall be allowed in catechisms, sermons, and town-council discussions. Another memorialist prays the Senate to order the publication of a "popular library," which all citizens shall be obliged to purchase, the plan being to present every citizen with one volume annually, and to add the cost of the volume to the poll-tax. The third memorialist, having noticed the rapidity with which children, after leaving school, lose whatever facility of reading they may have acquired there, prays that the government would establish, at its own expense, a small weekly or monthly journal, to be distributed among the young who no longer attend school. These ideas seem to be a little in advance of even French progress. On all of the memorials the Senate passed to the order of the day.

Among the practical innovations is the introduction of sewing-machines in the schoolroom. An appropriation has been made for the purchase of four sewing-machines, one of which is to be placed in the Douai Female Normal School, the others in the parochial schools of Lille, Valenciennes, and Dunkirk. In New York and other cities, where the newspapers teem with propositions to teach the theory and practice of the sewing-machine, and schools are established promising to graduate "perfect operators for only one dollar," there is no necessity for the adoption of this French novelty. But it may be that this would be a desirable feature in some suburban and especially in rural schools, if for no other purpose than to impress upon the popular mind the advantages of the great domestic labor-saving machine. The harp—beautiful in its poetical associations, but useless and insignificant in its application, in this piano-playing age—is taught even in backwoods seminaries; surely a cabinet-case sewing-machine is as interesting as a work of art, and the plainest one far more

utilitarian, and more consonant with the elements of our practical civilization.

After all, we can expect to derive but little advantage from any French novelties in education. France has done much for the welfare of the deaf and dumb and the blind, much for science and art, and

much for general philanthropy. But, looking abroad, our eye rests on another spot, where we hope for educational advancement. Germany has, within a comparatively few years, done more for popular instruction than France could have accomplished in a century.

OBJECT-LESSON ON IRON.

TEACHER. Now, class, look at this, and tell me what it is.

Class. A piece of iron.

T. Yes. You may name as many of its properties as you can, and I will write them on the blackboard for you.

C. It is heavy, hard, solid, stiff, of a dark color, dull, can't see through it—

T. Stay, that will not do; "can't see through it" will not look well on the blackboard; you must think of a word to express that property.

C. Opaque.

T. Right; go on.

C. Iron is imperfect.

T. How did you discover that?

C. You told us that gold, silver, and platinum are the only perfect metals; therefore iron must be an imperfect metal.

T. Very good; I am quite encouraged to find you remembering so well, and reasoning for yourselves. Can you think of any other properties? Can I break this piece of iron?

C. No; it is tough.

T. A better word?

C. Tenacious.

T. Right; and if it is tenacious, what other properties will it be likely to possess? Do you remember what we said upon this subject when we were talking about gold?

C. Yes, teacher; it will be malleable and ductile.

T. Because it is tenacious?

C. No; but it could not be malleable and ductile if it were not tenacious.

T. Very well; can you name any sub-

stances that are tenacious, but possess neither of the other properties?

C. Wood, leather, cloth, and paper.

T. Right; all metals, however, possess the properties of malleability, ductility, and tenacity, in a greater or less degree. Will iron melt?

C. Yes.

T. Therefore it is—?

C. Fusible.

T. Right. Now I will show you the other side of this piece of iron; what will you say of it?

C. It is rusty, red, and rough.

T. What will make iron become rusty?

C. Letting it remain in water.

T. In the course of time what will the rust do to the iron?

C. It will eat it away.

T. Do you know a word which expresses this property of being eaten away by rust? No? It is corrosive. Acids will corrode more quickly than water; what is an acid?

C. Any thing that has a sharp, sour taste.

T. Yes; now read over the properties of iron, as they are written on the blackboard.

C. Iron is heavy, hard, solid, stiff, of a dark color, dull, opaque, imperfect, tenacious, malleable, ductile, fusible, and corrosive.

T. What is done to the iron to make it malleable and ductile?

C. It is heated.

T. Do you know how many kinds of iron there are?

C. Three; forged iron, cast iron, and steel.

T. Very good; do you know any other name for forged iron?

C. Wrought iron.

T. What is the meaning of the word wrought?

C. Worked.

T. Yes; what then do you understand wrought iron to be?

C. Iron worked into shape.

T. But what must be done to it before it will be soft enough to be beaten into the form or shape desired?

C. It must be made hot.

T. What is the iron block, upon which the blacksmith forges his iron, called?

C. An anvil; a forge.

T. Both are correct. What is cast iron?

C. Iron melted until it can be poured into moulds.

T. Yes; it requires a great degree of heat to convert iron into a liquid; you have, perhaps, some of you, been in an iron-foundry, and have seen the liquid fire pouring heavily down from the furnaces.

C. I have, teacher.

T. You can tell us something, then, of the process of casting, and of the moulds.

C. The moulds are made of a kind of loam, or clay; all the patterns that are to be raised-work on the iron, are hollowed out in the clay; and all patterns that are to appear hollowed on the iron, are raised on the clay. After the melted iron is poured into the shapes, it remains to get quite cold; the moulds are then broken off, and the iron remains of the required form.

T. Which is the more durable, wrought or cast iron?

C. Wrought iron; cast iron easily breaks.

T. The casting of iron, then, destroys its tenacity, and renders it—what instead?

C. Brittle.

T. Right. What do you consider steel to be?

C. The best kind of iron.

T. That is about correct; it is iron worked into a more perfect form. Can you describe the process?

C. It is made hot, and then put into cold water.

T. Yes; the fire for heating it is chiefly composed of charcoal ashes and bone shavings; this gives the iron a whiter appearance, and renders the grain, if I may call it so, closer and finer. After this heating it will bear a very high polish. What is the red-hot iron plunged into cold water for?

C. To make it hard.

T. You would do better to say, "To temper it." The temper signifies the degree of hardness and brittleness, or of softness and elasticity to which it is brought: the more suddenly it is cooled, the harder and more brittle it becomes; the more slowly it is allowed to cool, the softer and more elastic it will be. What do you understand this property, which we call elasticity, to be?

C. The power to spring back into the shape it has been forced out of.

T. Very well. Now tell me some of the uses of iron.

C. To make stoves, machines, engines, chains, farm and garden tools, ships—

T. You would find it difficult to name all the uses to which iron is applied, they are so numerous; but we must not omit cutlery. Who can tell what cutlery is?

C. Knives, scissors, swords, chisels, plane-irons—

T. Yes; instruments used in cutting. Of what are they chiefly made?

C. Of steel.

T. Why is steel used for the manufacture of cutlery?

C. Because it is hard; it will take a fine keen edge; and can be highly polished.

T. Which do you consider the more useful metal, iron or gold?

C. Iron.

T. You are quite right; the loss of iron would cause us far more inconvenience than the loss of gold would; yet we are in the habit of speaking of gold as being more precious than iron, and it is far more expensive. How is this?

C. Because there is less gold than iron in the world.

T. You are right; the value of any article is determined by its abundance or scarcity, and by the ease or difficulty with

which it can be obtained. Where is iron found?

C. In almost every country in the world.

T. It is; and we shall do well to notice the wisdom and benevolence of God, in thus universally diffusing so useful a metal. Had it only been found in a few places, it would not have been, as it is now, within the easy reach of all: the cost of transportation would have made it much more expensive. But Edward has a question to ask, let us hear what it is.

E. What do you mean by transportation, teacher?

T. Are you puzzled by a word so easily defined? The class will turn their thoughts from iron to derivations, a few moments. What does the affix "tion" signify?

C. The act of.

T. Very good. Now there are two other parts to the word. Give me the roots and significations.

C. Porto, to carry; trans, over or beyond.

T. Well, then, the word means—?

C. The act of carrying over.

T. Yes; then the expense of carrying iron a long distance, either over land or water, would make it cost more. As you have been very attentive to the lesson, I will tell you one or two historical facts which have some connection with our subject.

Peter the Great, emperor of Russia,

learned the trade of a blacksmith, in order to set an example to his subjects; and when he worked at the forge, he made the boyards, or noblemen, blow the bellows, stir the fire, carry coals, and perform all the other offices of blacksmiths.

Gustavus Vasa, king of Sweden, worked as a common laborer in the iron mines of Dalecarlia; the miners grew very fond of him, and heartily embracing his cause, enabled him to resist the tyrannical Danish king, Christian the Second. The memory of Gustavus Vasa is still held in great veneration.

A few years ago, an American blacksmith, who was very fond of learning, undertook to study different languages, and was so diligent that he soon learned, I think it was, fifteen languages. He then started on a tour through Europe, delivering lectures. People call him "the learned blacksmith."

Boys, what can hinder some of you from doing as well? Diligence and perseverance will enable you to overcome difficulties, and to rise to any height which other men have been able to reach: perhaps even to go a step beyond them.

"All that other folks can do,
Why, with patience, should not you?
Only keep this rule in view,
Try, try, try again."

The lesson should now be recapitulated.

THE UNFINISHED PROBLEMS OF THE UNIVERSE.*

III.

THE TWO METHODS OF OBSERVATION.

WE have converted time into space; this was the first grand accomplishment for perfecting observations. A second of time by the old method was marked out

by the beats of a clock. When the observer desired to fasten the precise moment at which his star crossed the meridian wire of the telescope, fixing his eye upon the star, with his ear he took up the beat of the clock. This was the exact order of observation. He commences his count—"Five, six, seven, eight, nine;" and between "nine" and "ten" the star passes the

* Address by the late Prof. O. M. Mitchell. "Pulpit and Rostrum," No. 3. New York: Schermerhorn, Bancroft & Co.

meridian wire. He divides the space over which the star appears to pass in a second of time into ten equal parts, as nearly as he can, and enters in his note-book that the star passed the meridian wire at so many hours, so many minutes, so many seconds, and so many tenths. That was the old method. If the astronomer were called upon to mark the passage upon many wires, as is often done in a transit instrument, when he shall have obtained the passage of the first wire, he stops and enters it in the note-book. He must keep the count of the clock, and he must keep his eye upon the star; and his attention is divided between a variety of objects.

Now, by the new method, the clock records its own beats, takes care of itself; and the astronomer has nothing to do with it. An electro-magnet under the control of the pendulum of the clock (which by its motion, swinging backward and forward, moves a delicate wire upon an axis, so as to dip it at every swing into a cup of mercury, and close the circuit) brings a point down, and strikes a dot upon the disk revolving with uniform velocity to meet it; so that at the end of every second a dot is struck upon this disk; and thus, dot by dot, every second of time is formed into space. Then, taking up the micrometer, we may cut the intervals between the dots into ten thousand parts; and thus we divide them down to any degree of exactitude.

When this great experiment was made in the outset, I attempted to unite this little piece of revolving wire, moving up and down, with the telescope, by some material sufficiently delicate and perfect to accomplish the result. I found it next to impossible to get material which would answer the purpose. So delicate had the wire to be, that a single fibre of silk, or a single human hair as fine as ever graced the head of beauteous maiden, was all too coarse for this purpose. It had not the requisite spring for such a delicate movement; and when this point dipped into the mercury it rebounded, and there were several touches instead of one. At length I went to the spider, for aid in this dilemma. I spun from him a web, which for three long years in every second of time

was expanded and contracted, and performed the mighty service of uniting literally and absolutely the heavens with the earth.

THE NEW METHOD OF OBSERVATION.

When the star enters the field of view, the observer, located at his transit instrument, has near him a magnetic key, such as belongs to all the telegraphic offices. That key being struck, brings down a pen-point by the action of electro-magnetism. Here is the revolving disk; here the steel point; and when the key is touched, down comes the point, and striking upon the disk rebounds instantly, and the disk moves on uninterruptedly; and thus you have time, from second to second, converted into space upon the circumference of the disk. When one circumference of the disk is full, the disk moves itself on a little railway track just far enough to present a new circumference for another line of dots; and when the disk is filled, you have a perfect time-scale, absolute in its character, on which the clock, by automatic power, has recorded its own beats, and made a perfect record of itself. On that disk, by another magnet, another point is drawn down, and strikes, at the will of the observer, the precise moment at which he marks the transit of the star across his meridian wire; so that all he has to do is this: Take his place at the telescope, watch the coming of the star, pay no attention to the clock (for that takes care of itself), and at the instant his eye catches the bisection of the star by the wire, touch the key, the record is made, and all is done. Thus, by this new method, the astronomer is relieved of the intense responsibility of the old method—wearing out his nerves, destroying his system, and rendering him, at the end of a certain time, incapable of continuing his observations. Another advantage gained, is that we may introduce as many wires as we please upon which to mark the transit of the stars, and thus reduce our observation to as great a degree of precision as we may desire. By the old method, remember, the observer is compelled to stop after the passage of one wire, and record the observation; and while he is doing

that, the star is going on. By the new method, he has nothing to do but to touch a key, and the observation is recorded. Such is a rough outline of this new method of astronomical observation. So perfect is this method, that we read from the disk with the utmost possible facility; and we have conducted this examination in such a manner, that now the thousandth part of a second is a quantity of time which we appreciate and employ every day.

PRACTICAL USES OF THE NEW METHOD.

Soon after the application of these new methods, it was manifest that we could, by the magnetic telegraph, determine the difference of longitude between two places with wonderful precision. Here is one of the greatest triumphs of modern science. When we reflect upon the results reached by the telegraphic communication between distant points in the determination of longitude, it seems positively as though modern science and skill paid no longer any attention to time; that it just crushed, crowded, and condensed a hundred years into a single hour! And it has been done. You go now and examine and determine the difference of longitude between the great Observatory of Paris and that of Greenwich, and you will find that by the telegraphic method, by these new means, we get better results in a single hour of one night than had been reached by all preceding time, although they had worked for two hundred years. In this particular department of astronomy, in linking together the different observatories of the world, we have now an advantage that no old astronomer ever possessed.

TO ESTIMATE DIFFERENCE OF LONGITUDE.

Suppose we wish to determine the difference of longitude between New York and Philadelphia. The city which is furthest east will have a meridian such that the star will cross earlier than in the western one. Now suppose the two observers are in telegraphic communication, and that there is a disk at each extremity receiving clock-beats. The observer in New York signalizes his friend in Philadelphia, and says, "The star is coming up to New York—look out!" and standing by

the telegraph, the instant the star passes his meridian, he strikes the magnetic key, and the moment it is recorded on his disk it is recorded in Philadelphia. Then the Philadelphian waits until the star comes into his field of view, and he signalizes his friend in New York that the star is in the field of view; and the moment the transit occurs, he strikes the key, and the record is made. The interval of time between the two records is the difference of longitude. The process is perfectly simple; there is no difficulty about it; all can comprehend it.

There are now two delicate questions yet to ask. The difference of longitude is actually obtained upon the supposition that all is perfect, and that this swift-winged messenger, the lightning, has flashed from one point to the other with infinite velocity. If it do not travel with infinite velocity, if it has lagged at all by the way, in communicating the messages, that amount of error will be entailed upon the result. Then it becomes necessary to investigate the great problem—

WITH WHAT VELOCITY DOES THE ELECTRIC CURRENT FLASH ALONG THE WIRE?

I have had the opportunity of investigating this problem. I secured a telegraphic communication of wire entirely around from Cincinnati to Pittsburg and back again, in order to determine whether electro-magnetism accomplished the circuit of six hundred and seven miles of wire instantaneously, or whether it took some time. My disk was prepared, and the clock-beats were being received upon it. I arranged that two pens should record upon a metallic disk by steel points, by the most delicate dots imaginable, the time for the passage of the electric current. Then I prepared inside the observatory a short circuit of six or eight feet of wire, and to that battery I gave the identical intensity which belonged to the battery for the long circuit. I then arranged so that I could interchange these two points with each other, making one move with the long circuit, and the other with the short, at pleasure. Having arranged the whole apparatus, I watched, with the deepest interest, to see whether the clock-beats,

as recorded by the two pens upon the disk, would fall at the same moment of time, or whether an interval would exist which the eye or the ear could detect. But when the pens fell, it wanted a keener and sharper ear than mine to detect any difference. I then looked to see whether the dots struck were in a straight line radiating from the center of the disk; but with the most rigorous examination, I could discover no difference. I was compelled to restrain my curiosity until the night should pass and the daylight come

again. Then, with an instrument constructed for the purpose of measuring the thousandth part of a second, I measured the interval between the two dots—those struck by the *long*, and the others by the *short* circuit. I found invariably the same result in more than a thousand observations. I divided a second into one thousand equal parts; and that journey of six hundred and seven miles was performed in twenty-one of those parts—in twenty-one thousandths of one second of time.

ROMANCE OF NATURAL HISTORY.*

HIGHLY attractive to a young observer is the variety of life which meets his eye, as he examines, with a good microscope, a drop of water from some pool rich in organisms. Suppose he has nipped off the growing terminal bud of some *Myriophyllum* or *Nitella*, and, having a little broken it down with the point of a needle, has placed it in the animalcule-box of the instrument, with a small quantity of the water in which it grew, selected from the sediment of the pool-bottom.

The amount of life at first is bewildering; motion is in every part of the field; hundreds and thousands of pellucid bodies are darting across, making a mazy confusion of lines. Aggregations of little transparent pears, clinging together by their stalks so as to form balls, go revolving merrily through their waste of waters. Presently one of the pears severs its connection with the family, and sets out on a voyage on its own individual responsibility; little tops of clear jelly with a few specks in the interior.

Here comes rolling by a globe of glass, with sixteen emeralds imbedded in its substance, symmetrically arranged, each emerald carrying a tiny ruby at one end. Elegant forms, resembling fishes, or battle-dores, or poplar-leaves, for they are of many kinds, all of a rich opaque green hue, with a large transparent orange-col-

ored spot, wriggle sluggishly by, the leaves now and then rolling themselves up spirally, and progressing in a cork-screw fashion. Disks of clear jelly are seen, which are continually altering their outline, so that you soon come to the conclusion that they have no particular form, but every imaginable one in turn.

The mass, which seems a mere drop of thin glaire, almost or quite homogeneous, with only one or two bubbles in it, pushes out points and projections from its outline, excavates other parts, lengthens here, rounds off a point there, so that it never appears twice in the same shape. Here a tiny atom arrests the eye by its singular movements. Its appearance is that of an irregular ball, with a bright spot near the circumference; the whole surface set with bristles projecting obliquely from the periphery. It remains in one place spinning round and round upon its center, sometimes so rapidly as to preclude any sight of its distinctive characters, at others more deliberately, displaying its bristles and surface. Sometimes it rolls over in all directions, as if to let us see that it is sub-spherical, not discoid. And now and then it takes a sudden spring sidewise, to a distance perhaps twenty times its diameter, when it spins as before, or else skips about several times in succession. Truly, this miniature world is more wonderful than the shoals of whales in Baffin's Bay, or the herds of elephants in the forests of Ceylon.

* Gosse's Leaves.

AMERICAN EDUCATIONAL MONTHLY.

SEPTEMBER, 1865.

SUPERLATIVES AND SCHOOL BOOKS.

EITHER the school-book makers of the present day have become great geniuses, and their works have become amazingly perfect, or the educational journals of this country, and the reviewers of school text-books, are guilty of great wrong. Books which seem to us most indifferent and imperfect, are spoken of with a rapturous ecstasy scarcely dignified or permissible even if Shakespeare's plays or Homer's poetry were the theme. Every volume reviewed is represented to be so singularly and unexceptionally good, its style is so pure, its details are so well selected, its superiority to all others is so evident and marked, that we are driven to ask where all the bad books go to, and how is it that none of them are heard of. For, with every disposition to think well of American authors and school-book makers, we cannot believe that there are no dunces or pretenders left, or that none of them rush into print.

To our editors and reviewers every book which is presented to them seems "destined to supersede all others;" will be "appreciated and used by every teacher and pupil in the land;" "supplies a void;" and is "bound to work out a great revolution," etc. In short, that every book is "really a most remarkable production" is as much a matter of course, as that Mr. John Bull is the most remarkable man in England.

Some are not satisfied with heaping superlatives upon the books. They go further, and bespatter the authors and publishers personally with stereotyped compliments. They enlarge upon their "philanthropic motives," and upon their

labors "in the cause of humanity;" and the emotions which their works excite are dwelt upon with the minuteness and enthusiasm of an impulsive boarding-school girl, when writing to her sentimental friend.

Now, if it is the primary object of our educational journals and school-book reviewers to flatter authors and put money in publishers' pockets, then all this is very well. But we contend that this dead level of approval, uniform as an assembly of Quakers, and vapid as *cau sucrée*, is most damaging to the best interests of education, and is demoralizing to author, publisher, teacher, and pupil.

As long as the relations of school-book publishers and educational editors maintain their present status; as long as the parties of the first part continue rich and powerful, and the parties of the second part poor, and hence weak and time-serving, so long shall we be likely to have "golden opinions" of all books published, good, bad, and indifferent. The editor and reviewer may know the truth, but he will fear to make it known to his readers, lest the more fortunate publishers shall frown upon him and withdraw their favors.

One of the primary objects of the projectors of the AMERICAN EDUCATIONAL MONTHLY was to give free, intelligent, and candid opinions of text-books, without regard to the profits or feelings of the authors and publishers of said books. We were confident that we could not do a greater service to the cause of education than by pursuing this course. Though our friends have already given us great credit for independence of position and freedom of expression, yet we must confess that our plans have not been as fully and as rapidly developed in this direction as we anticipated.

We just begin to learn what obstacles are in the way. No one man is qualified to review all the books which are offered.

Hence, we send certain books to certain men who are known to be well qualified to estimate the merits and demerits of the said certain books. Then other books, upon other subjects, are sent to other men who have made such subjects their peculiar study. Yet we find that many of our writers are too friendly, too charitable, too sympathizing. Exactly whom to blame is a problem not easily solved.

However, as our plans mature, our readers will be sure to observe that it is our purpose to speak of books as their merits deserve. If we commend, we shall do it only when books are worthy of commendation; and when we criticise, we shall do it in all truth and sincerity.

PRINCIPLES AND PROGRESS.

THE mutual relations of the parent, the pupil, and the teacher, have recently been discussed in various quarters with considerable interest. Even the most prolix and uninteresting of these have contained useful hints and reminders, some of which we condense to the form of axioms.

School is not the first agent, in order of time, in the formation of character.

Children are under restraint by diet and obedience; so that moral training is, in fact, begun in infancy.

The teacher has to win the love of the child, but parents take it and control by it.

True teachers keenly feel the action of parental influence upon children, and regulate their teaching thereby.

Only bad workmen complain of their tools. It is a suspicious circumstance when a teacher complains of the bad boys he has to deal with. Boys are about the same in most schools.

Teachers are in the invidious position of judges in their own cause, and are sometimes jealous of appeal against their de-

cisions. True painstaking teachers will delight to listen to reason from boys, and will not fear appeals against their judgment any more than legal judges fear appeals to higher courts.

The controlling principle is love. The whole theory of the stick is involved here.

A child badly brought up is a difficulty with teachers—he has to be taught and untaught and retaught. The plain remedy for his badness is to begin anew.

Punishment teaches nothing.

Penalties are rendered needful from their own defects.

With an idle boy, let him be educated to habits of industry suited to his capacity, led on by any thing in which he does show an interest, encouraged for every success, and we shall find that “nothing succeeds like success.”

With an untruthful boy, trust him, but with eyes open, and you do much to make him truthful. Punishment for reformation's sake ought to be suited and proportioned to the offense—a condition which the stick does not fulfill.

Teaching is the process by which occasions for intellectual activity and for knowledge are presented to the intellect.

Intellectual instruction is that intellectual activity and knowledge occasioned by teaching.

The first principle in teaching is, that external objects must be presented to the senses, so as to occasion perceptions of the external world, or exercise the presentative powers.

The representative powers depend on the previous activity of the presentative powers.

Generalization depends on the activity of earlier processes, and is the basis of what is termed intuition.

Principles of instruction may be learned and applied like any other fixed principles.

Of these and similar "first principles" it is well to be reminded. But, while refraining alike from a merely superficial gaze and from a fixed watching of favorite points, we need an earnest, steady view of the entire field of education. Truly is it said, that in order to a correct understanding of the nature and importance of education, we must lose sight of individuals, and look at men in masses and for periods of time. It is only in this way that we can see the full force and influence of the various elements at work in building up and fashioning individual character. Whatever has tended to improve or ameliorate the condition of man, whatever has exerted an abiding influence upon a people or race, belongs to education. It is by marking the gradual advance of civilization, from the earliest dawn of history to the present time, and noting the various circumstances that may have tended to further or retard its progress, that we obtain a truer view of the character of education. The utility of axioms and principles in a disciplinary course is conceded by all; similar requisites in a more immediately practical course are obvious. But the relative importance of these principles, the comparative value of the various requisites, the proportions in which theories and facts are to be united, the manner in which they can be made to interweave, to blend, to coalesce, will depend in a great degree on circumstances of comparatively local interest, on events arising in social and political life, in the various mutations of human destiny. The foundation-stones of education are quarried during the crash of revolutions, and a substantial system must have some fallen dynasty at its base.

Journal of PEDAGOGICAL LAW.

THE first article on "Pedagogical Law" was published in the March

number of the "MONTHLY." The contents of that article were: "A brief Introduction; Parent and Child; the Duty of Parents; the Foundation of Parental Rights; the Power of Parents among the Jews, Persians, Egyptians, Greeks, Gauls, and Romans; Exposing Children; the Hindoos; the First Emigrants to Massachusetts; the Extent of Parental Authority at present in England and America; Teacher and Pupil; the Teacher *in loco Parentis*; the English Law as to Corporeal Punishment; the American Law on the same Subject; Examples in which a Teacher was Justified by the Courts; the Danger in Punishing to Excess."

The second article is given in this number. The law as to whether a teacher has a right to punish for misbehavior on the way to or from school, will probably constitute the third paper.

These articles are prepared for us by a distinguished member of the New York bar, who has access to the best law libraries in the country, and is indefatigable in his researches. It is now more than a year since he commenced his labors, and a mass of matter is accumulating on his hands, all of which will be reduced to system and given to our readers in such a shape as will, it is hoped, enable teachers to arrive at a correct understanding of their legal rights, powers, duties, and responsibilities. We believe that such an understanding is of the highest importance to the practical teacher for various reasons, but especially because it will, more than any other one thing, increase his usefulness, and enhance his pleasures, by enabling him to act under trying circumstances with that manly confidence which inspires respect, and gives dignity, importance, and success to its possessors. Those who take the "MONTHLY" this year and next will probably have all these articles. They are obtained at great expense, and will be published by us exclusively. We shall thank our read-

ers for detailed information of trials and decisions of the courts on matters pertaining to teachers. We have already received valuable letters from persons whose names we shall give hereafter; and we shall highly esteem the favors of all who can aid us. Our object is to collect from probably more than a thousand sources, and arrange in systematic order, all the laws of general application now in force relating to teachers; and to submit them so arranged to our readers. It is with the expectation of fully accomplishing this object, that we hazard the opinion that no teacher in the land can afford to

be without these articles on "Pedagogical Law." They will add to his literary attainments a clear comprehension of what are his legal rights; and thus relieve his mind of that harassing uncertainty, and that painful fear of humiliation, which, in all avocations, burden the lives and disappoint the purposes of those who do not know their rights. Every teacher's rights are in his own keeping; let him know them, and under no circumstances can he act timidly, taking counsel of his doubts and fears, but rather, as becomes his station, wisely, and with dignity, determination, and safety.

EDITORIAL CORRESPONDENCE.

HALLE, Prussia, August 3, 1865.

HALLE is not only noted for its university, but for that immense system or complex of schools which the good and pious Francke established about 1700, and which is known under a general name, equivalent to our term "orphan asylum." This institution, which began with a mere handful of children, and with a mere *groschen* contribution, in 1694 or thereabout, in a private room in Francke's house, has expanded into a gigantic union of schools, giving employment to a hundred and forty teachers, and having in charge more than thirty-three hundred children. And as it now stands in the front rank of German educational institutions, I have, during my stay in Halle, busied myself in gathering there what hints I could touching German education. And these, in a loose form, I will try to convey in this letter.

And of this asylum-school I will say, first, that it is a little world in itself. You may try to conceive what must be the necessary accommodations for the following departments: School-rooms for thirty-three hundred children; rooms for a hundred and thirty orphans; rooms for nearly a hundred children from families of rank; rooms for some hundreds of other children who are sent away from more humble homes, as we send children away to a boarding-school; a hall where hundreds dine together, and the rooms belonging thereto; a large library; apartments where many of the teachers live; a large gymnasium (in the American use of

the word); a printing-house for Bibles; the printing-house of the establishment; the bookstore, apothecary's department, and the hospital. By no illustration which I can draw from America can I convey an idea of the immense extent of the buildings, and the display which they make. I am filled with wonder every time I look at them; and not more at the greatness and power of the institution as it now stands, than at the remarkable display of faith in God which its founder had, who ventured to go forward and make his plans to build the immense structure, after the unexpected gift, from an unknown friend, of three dollars and fifty cents of our money. When the boys go by in the morning at eight o'clock, passing, as they have to, under my window, it seems like an army of *infantry* on the march; and when they come pouring out at the hours of dismissal, it is the greatest display of boy and girl life with which I am acquainted.

I have jotted down some items of which I will speak, not connectedly, but separately, in which I think Americans will be interested. And these shall be drawn, not alone from this school, but from many; only, here I will state them in a generalized way. I will only say in advance, that I do not find that superiority in the German schools over our own, which one might expect to find. Doubtless there are, and indeed there are, minor points in which theirs excel ours; but the German schools have been, it seems to me, greatly overrated. But let this appear

from the special details which I will present. And first let me speak of

DISCIPLINING BY PUNISHMENT.

If in an American school, with our newspapers argus-eyed to see every thing and report it to the world, the violence which takes place in a German school should occur, it would create such deep feeling in the community that nothing short of the removal of teachers would quiet it. Of course, before the visitor this violence is not apparent; yet I have seen a boy struck with the clenched fist on the side of the head with benumbing force; and I know that the teachers kick the boys, and strike the head, and snap the nose, and pinch the back of the neck in a brutal manner. If German schools are of such superior excellence, it is gained not by the help, but in spite of a system of such gross and injurious punishments, as are not only hurtful to the health, but to the character of pupils and teachers. Well considered, faithful punishings on the hand are not in vogue here; only passionate outbreaks of violence, which generally accomplish their object by blows on the side of the head. And, of course, they are constantly occurring, and the teacher is seen every few minutes darting at some unoffending boy, maltreating him, and letting the lad, looking as demure as possible to soften the teacher's heart, slip away to his seat again, soon to be in danger of the same barbarous penalty. And this leads me to speak of

ORDER IN THE SCHOOLS OF GERMANY.

And this, in truth, as is the case in almost every European school that I have seen, is most defective. No school of respectable order have I seen in Ireland, or England, or Germany. No one of those things which we either strictly enforce under the sanctions of law, or develop under the guidance of duty, are here attended to. Prompting is open and shameless; whispering is universal; playing is general; and the teachers are ever sending forth their unceasing hiss, the signal for order, which hardly commands even momentary silence. I have known of boys fighting in school three successive rounds, while the teacher's back is turned; and the noise, which is almost always heard in a room of boys and girls, would be most distressing and distracting to an American teacher. With the higher classes in the gymnasium of course it is different; for when boys have reached the age of eighteen or nineteen they have lost that restlessness which characterizes childhood, and sit quietly without the enforcement of law. It would amuse any one of my readers to see the close of a German school: the bell strikes while the teacher is giving instruction; in an instant all spring, and become like wild beasts who have scented blood. The impatience to leave the room becomes so great that, could you see them, you would never

speak contemptuously again of "lethargic Germany." In a minute the teacher closes his instructions, merely ending his sentence; and in a moment, quicker than I can tell you, all have sprung toward the door, clambering over seats for the most part, with caps on their heads; and you believe that what Goethe called the *Sturm und Drang* period has come again. Certainly if the German schools are so great, I must confess that their noise and disorder are also great.

METHOD OF INSTRUCTION.

The method of instruction in this country has one great merit, and one great demerit, which last, however, is offset by one equally great with us. The merit is, that educators devote a great share of their efforts to a natural method of study: to such a course as calls into play the mental faculties in the order of their natural development. From the infant schools, where nothing is taught excepting singing and subjecting to authority, up to the highest classes in the gymnasias, where passages from Thucydides and Tacitus are analyzed with the utmost exactness, the course of education moves on, conformably to the gradual awakening of a child's nature. And herein is the great merit of the Pestalozzian system; and the art of instruction here is the carrying of a true philosophy of the mind into the school-room, securing admirable practical results of the highest importance. Did space allow I should be glad to illustrate this. And the demerit of which I spoke, and which is equaled by one with us, is the prominence which is given to the memory and to matters which must be committed to it. With us this is done from the book; with the Germans, from oral instruction, or what may be called familiar lectures. We assign our children lessons which are to be learned by heart, and then give them time to study them; the Germans allow little time for study, but a class is "lectured" nearly all the time. Look into a room with me for a moment. Here you have one class out of eleven or twelve, which make up what we should call a high-school—the Germans call it a *Real* or practical school. The room is hot and entirely unventilated—two universal evils in German schools. The seats are mere benches, the only back being the bench on which the boys behind lay their books. Rude and primitive as the benches of an American college, are the seats of a German school. At eight o'clock in the morning the wild disorder softens down, and when the teacher comes in there is a tolerable degree of stillness. Rather, I should say, a *tolerable* degree of confusion, that no good American teacher would bear for an instant. The first hour to-day is given to religion, let us suppose, as is the case there twice a week. The Germans use this word in a manner which, were it not so solemn, would in our ears be

ludicrous. "Do you take religion?" asks one German lad of another. "To teach religion," "to neglect religion," "to attend to religion," and "to get religion," are terms of mysterious meaning to an American in Germany, till he learns that by "religion" is merely meant the catechism approved by the government. Well, the boys "take religion" for an hour, and then there is a breathing spell of five minutes, which shows you, by the terrific disorder, that the "religion" communicated has not brought any soothing influences to bear upon the young and ardent spirits. Then another teacher comes in, and he lectures the children for an hour on topics of general geography; not hearing them recite a lesson from a book, but talking, and then reviewing the ground with questions. And thus geography is taught to the younger children, though the older classes study it topically, gathering their facts from what books they can. They do not commit from a text-book, as is the universal way with us. Their topical method we have in our best schools, and their method of teaching by oral lectures may be nearly as good as ours of committing much to memory from a text-book. The geography of our country is strangely neglected. The map of the United States is put at the end of the atlas—next to that of Polynesia, and beyond that of Africa. The place assigned us in the geography is not much more honorable. Much is said about the "copper-colored" inhabitants of America, and it is not strange that the Germans believe that the Indians are a power yet, and that they wonder so at seeing a "born American" who is as white and well-dressed as themselves. Their American statistics, too, have been all out of date till this war came, and compelled them, and indeed all Europe, to confess that if we had boasted loudly of our civilization and our greatness we had the best reasons in the world for doing so.

After the geography comes another little space of five minutes' turbulence, and thereafter reading; then another recess of five minutes, and the fourth and last hour of the session, which may be claimed by Latin, or French, or arithmetic, or writing, or history, or drawing, or grammar. Latin is taught almost universally; French has a prominence now, which is slowly, but surely, yielding to the claims of the English language; but whatever is taught is taught almost wholly by oral instruction, instead of the patient study of text-books. Seeing the fact that a class is reciting *all* the time, one wonders when they *study*, and is only satisfied when he finds that they never study at all, except at home in the evening; that during the school-hours there is a perpetual process of pouring in oral instruction into the ears of the children. Thus it comes that the German children's minds are overlaid with knowledge; they receive so much that

they can not digest it all; and the praise for erudition which they receive is just as ill-timed as it would be to extol a man for the amount which he eats on Thanksgiving-day. Nor are German schools free from that curse of our American ones, a great number of studies pursued at the same time. The list of subjects at which children work here at once is as large as at a superficial country academy in America.

But here I must end for this time, and shall hope to renew the subject in a future letter.
W. L. G.

NEW YORK, August 1, 1865.

MUSIC IN THE NEW YORK PUBLIC SCHOOLS.

THAT vocal music may be taught in our public schools is a fact that must gratify the friends of youth; that it is not taught carefully and conscientiously is a notorious fact, and one that grieves many lovers of music. The compositions presented to the children are mostly of the most trivial and unimproving character.

Visiting lately the male department of one of our most celebrated grammar-schools, we were present during the hour that the professor of music was at his post. The boys were made to sing "America," "Columbia the Gem of the Ocean," "Hail Columbia," "Tramp, Tramp," "John Brown's Body," "Baylon is Fallen," and "Wake, Nicodemus." Not one word was said about notes, not a single scale was sung; in fact any person who could play the above tunes would have been just as competent as the professor was.

Another school that we know of is preparing for an exhibition, and the principal musical points of the programme are to consist of "Johnny Schmoker," and "Three Blind Mice." These are not primary schools, but grammar-schools.

Music should occupy a dignified position in our schools. At every music lesson some time should be devoted to notes and to the practice of vocal exercises. The harshness with which the boys are allowed and encouraged to sing is as reprehensible as it is unnecessary. Many persons have the most erroneous ideas in relation to the tone of boys' voices. Boys' voices should be cultivated to sing softly and sweetly. Our school-boys are not taught to *sing*, but are allowed to scream in the harshest and most unpleasant manner. It is time that the music in our schools should be looked after with more care by the school officers; that better results should be demanded. We would suggest to non-musical school trustees the following hints. When you hear the boys sing, and the effect is to make your head ache, take it for granted that they are not properly trained as regards *tone*. When you hear them sing *nothing* but tunes that every one whistles around the streets, you can be certain that they are not properly

trained as regards *tune*. Another hint: the boys can sing just as sweetly as the girls, if properly taught; and the quality of tone would be sweeter. Be as particular to have good musical composition taught as you are to have good school text-books used, and we can ask nothing more in that particular.

F. GILDER.

SOUTH BLOOMFIELD, O.,
August 5, 1865.

MR. EDITOR—I noticed in the July number of your journal, an article entitled "Tachygraphy versus Phonography," in which the writer denounces Phonography, and would fain make the uninitiated believe that it is not what it has been represented to be, and that it has *almost gone out of use*, etc., and that *Tachygraphy* is much simpler than Phonography, much more legible, and much more easily learned; and that Phonographic teachers are everywhere laying aside Phonography, and learning and teaching Tachygraphy.

I have been a phonographer for seventeen years, and instead of my laying it aside, I use it almost daily, with great profit and satisfaction, in reporting sermons, speeches, etc., and in keeping various memoranda, and for many other purposes, besides corresponding

with quite a number who understand the art and delight in its beauties.

We think your nameless correspondent expresses himself too strongly in his remarks against Phonography, in view of the many recommendations that have been given in its favor from year to year, by ministers, teachers, and other prominent persons who have learned and tested its merits. Have they all been mistaken? and is Phonography, which has been so enlogized by the press, and by the best men in our country for more than twenty years, really dead? We have abundant proof to the contrary, and can show that Phonography, instead of having fallen into disuse, is steadily gaining ground, and is being introduced into most of the best commercial colleges, as well as into other schools and colleges.

If Tachygraphy is being adopted by Phonographic teachers *everywhere*, we were not before apprised of the fact. As I know nothing of the art, having never before heard there was such a thing, I will not dispute any thing your correspondent has said in its favor; but if it is *so much* superior to Phonography, I will hail it with delight, and shall learn the art and teach it to others. If it is a failure, I shall expose it.

J. G. ADEL.

EDUCATIONAL INTELLIGENCE.

NEW YORK.—The statement made in the daily papers in respect to the contributions to the New York Union Theological Seminary was not complete. Messrs. James and John A. Brown give \$25,000 to found the Professorship of Hebrew and the cognate languages; Mr. John C. Baldwin gives \$30,000, of which the sum of \$10,000, with \$15,000 given previously, founds the Professorship of Biblical Literature; Mr. Joseph Howland, of Matteawan, New York, gives \$10,000; Professor S. F. B. Morse gives \$10,000, and founds the Lectureship on the Relations of the Bible to the Sciences; Mr. Zebulon S. Ely gives \$10,000, and founds the Lectureship on the Evidences of Christianity; Mr. William E. Dodge gives \$12,500, and Mr. Winthrop S. Gilman, \$5,000. One subscription of \$3,000, one of \$2,500, nine of \$2,000 each, and seventeen of \$1,000 each, besides numerous smaller subscriptions, are to be added, making the full amount of \$150,000.

—Miss Maria Mitchell has been appointed Astronomical Professor in the Vassar Female College, Poughkeepsie—the only known instance of a lady's holding such a position. Miss Mitchell is the discoverer of a comet which bears her name.

MASSACHUSETTS.—Harvard College is at last separated from the State. The law passed by the Legislature provides that the overseers shall be elected annually, and that the alumni, regular and honorary, shall have the right to vote for them, except that no alumnus can vote until five years after his graduation. No member of the faculty or the corporation can be chosen overseer. The Governor and other State officers are no longer ex-officio members of the board.

NEW JERSEY.—The Board of Trustees of the New Jersey Classical and Scientific Institution at Hightstown, have decided to purchase a lot situated upon Main-street for the erection of the buildings. It is said to be decidedly the most eligible, as well as the most desirable site for the institution, in the whole neighborhood. The buildings are to be commenced at once, and will be large and commodious.

MARYLAND.—The new School Law has some novel features, and their workings will be watched with interest. The number of school officers is far less than under the township or district system, which is in vogue in every other State, and this may prove an advantage. The county commissioners, receiving compensation for their

services, and liable to removal for neglect of duty, will naturally take more interest in the prosperity of their schools than unpaid and irresponsible persons. The school officers being all appointed, the difficulty often experienced from forcing partisan issues into elections determining the welfare of the schools, is obviated.

CANADA.—The Council of Public Instruction has withdrawn its sanction to the use of Morse's Geography in any of the public schools of Upper Canada. Hereafter it will not be lawful (after the copies now in actual use in any school are worn out) to use either Morse's or any other American geography in either the Grammar or Common Schools of Upper Canada. A violation of this order in any case, will subject the school concerned to the loss of its share in the Grammar School Fund or Legislative School grant.

ENGLAND.—Both the universities have voted addresses on the American assassination. That from Oxford has been acknowledged by Mr. Adams.

GERMANY.—The Fourteenth Congress of the Schoolmasters of Germany has just been held at Mannheim. Among the questions discussed were, the best methods of developing memory in children; the means of awakening in them a love of country; the advantages resulting from a larger share being given to gymnastic exercises in education; the study of music, especially of national songs; the necessity of teaching children, with the greatest care, the history of their country, and especially the great deeds and victories of the German people, etc. There are now in the different German States sixty-three educational periodicals.

ITALY.—The king of Italy has issued a decree, enacting that all the colleges of the kingdom shall bear the name of some celebrated philosopher or writer of the locality in which they are situated.

INDIA.—Both among the Hindoos and Parsees a decided beginning has been made in the education of their girls. At the Convocation of the University of Bombay for conferring degrees, it was stated that 109 out of 241 candidates passed the matriculation examination, of whom 86 were Hindoos, 19 Parsees, 2 Portuguese, 1 European, and 1 Mussulman. Of 32 candidates, 15 passed their first examination in arts; of 20 candidates for degree of bachelor of arts, 15 passed examination; and 2 Parsee candidates passed the examination for the degree of master of arts. Mr. Premchund Roychund, who has already given \$100,000 to the Calcutta University, has given a like sum to the Bombay University, toward the erection of a library, and a further sum of \$100,000, "toward the erection of a tower, to contain a large clock and a pair of bells."

FRANCE.—*A Town Council's Reasons for making Elementary Instruction Gratuitous.*—While the propriety of making elementary instruction both gratuitous and obligatory throughout France is being discussed, local authorities are, in ever increasing numbers, taking the initiative, by making it gratuitous in their own districts. Here are the reasons for that step, minuted by the town council of Rambervilliers, department of Vosges: "With a view to public order, and to the well-being both of the community and of the individual, it is desirable that elementary instruction should be within the reach of all. Complete gratuitousness is the effectual means of attaining this end. In towns even of moderate size, it is exceedingly difficult to draw the line of demarcation between that indigence which should entitle the family to gratuitous instruction, and that sufficiency to which it should be denied. In crowded populations, such as that of Rambervilliers, not only are the indigent unusually numerous, but there are a great many artisans, subordinate officials, and small tradesmen, who conceal their straitened circumstances out of honorable pride, and make relatively large sacrifices in order not to be ranked in the pauper class. The gratuitousness of elementary instruction for all, is a pecuniary relief to the greater number, a shield to the honorable pride of those who occupy the border territory between competence and indigence, and a protection to honest poverty, in one point, at any rate, against the invidious distinctions of fortune. In making elementary instruction gratuitous, the town sacrifices only the school pence, of which the annual average is £28, a twelfth part of the annual expense on account of elementary instruction. On the other hand, to adopt this measure is to anticipate the generous intentions of the imperial government in behalf of the masses, to exhibit civil equality, and to take away all excuse for the negligence of parents in not sending their children to school."

DENMARK.—*Misguided Patriotism.*—Primary instruction, universally diffused though it be, is at present in some danger from the want of trained teachers; said want arising from nothing but the inadequacy of the remuneration offered. A few years ago, as many as fifty teachers agreed to resign their posts, and emigrate in a body to America; and since then, situations, for which teachers with a normal school diploma were sought in vain, have been given away to self-taught men. In the higher schools a great effort is being made to strengthen the national sentiment, by teaching with emphasis the national history. In one of these schools particularly, established some years ago by a very popular clergyman, not any foreign language is taught, that the whole mind and heart of the pupils may be devoted to national subjects.

CURRENT PUBLICATIONS.

It is a pleasant thing, in taking up a new work, especially if it is of a scientific character, to find that its author thoroughly understands his subject, and can clearly convey his meaning to his readers in an interesting and suggestive manner. This remark applies to Dr. Lambert's new book on Human Physiology, Anatomy, and Hygiene,¹ which we confess to have opened with a strong prejudice against all popular treatises and text-books on these subjects; arising from the fact that generally they are dry epitomes or meretricious catch-pennies. We find it to be, however, a clear, comprehensive, well-arranged, and very suggestive *résumé* of the most important facts desirable to be known concerning the human frame, and the proper control and preservation of its various functions. Its *unique* feature is the complete and careful exhibition of the whole subject, by means of a well-digested Analytic and Synthetic arrangement, which is evidently the outcropping of the author's own thought and experience as a teacher, for the last quarter of a century. To us, this is the charm and the chief value of the book. "Life is short, and Art is long;" and condensation, conjoined with comprehensiveness, is the *necessity* of all learning and study in these latter days.

Dr. L.'s work is fresh; piquantly and nervously written, frequently interspersed with valuable suggestive remarks on topics pertaining to our every-day life, making us feel that it was written to stimulate as well as to satisfy thought.

We regret to see the book made an advertisement for any particular sewing-machine, or cooking-range manufacturers (see pp. 412-414). Although the articles in question are the best of their kind, they here are out of place.

The book is handsomely printed, on good paper, and copiously illustrated with some three hundred fine wood-cuts; forming a valuable text-book for the use of schools, or the amateur reader. The medical student and practitioner also, will not be justified in looking askance upon it as a mere popular treatise, since there is in it much food for thought, even to those who have gone over the whole ground before. An edition without the foot-notes has been prepared, which is well adapted for library use.

Every one who has succeeded in giving clear notions of algebra to beginners will readily concede that he has met with his

greatest difficulty in the very first steps—in the transition from arithmetic to algebra. "Tell me what a , b , c , x , y , and z mean, and I can then understand the rest," is the honest expression of every tyro. At this point, too, usually commences that disgust which finally expresses itself by saying, "I have no talent for mathematics. I like the classics, but I can not comprehend the signs and symbols and ghostly formulas which meet me on every page of my algebra." In fact, algebra, rightly taught, becomes of itself a language; its parts are to be construed, its symbols translated, and its formulas turned into good English. It ought to find its warmest advocates among the lovers of language.

More loss may be sustained, the very first week of the pupil's course, than can be retrieved in a whole lifetime. To tell the learner that "algebra is that branch of mathematics in which the operations are indicated by signs or symbols, and the quantities are represented by letters," is as intelligible to him as the oracular utterance of the physician who informs his illiterate patient that "the first diagnosis of his case indicates the necessity of phlebotomy." The pupil is too timid to say he does not understand so clear a definition, particularly as the teacher seems to think nothing of it. But "light" is in store for him. He immediately finds that the first letters of the alphabet represent *known* quantities, while the last letters represent *unknown*. Mark his progress. Here is something tangible. Tell him that an estate valued at a dollars has fallen to him, and you interest him because it is a matter personal to himself. He begins to look for income, and is informed that this handsome sum, put at interest at b per cent., will yield him annually the nice sum of c dollars. You wait for a response, at least, in an irrepressible glow of his countenance, at such good fortune. Of course, he smiles; he dare not say that he does not *know* so simple a letter as a —the *first* letter of the alphabet, too—the representative of a *known* quantity. What else can he do but smile in token of what he now *knows*, especially as it pertains to his own personal welfare? But down in the depths of his mind—not very deep either—he says, I do wish I knew what a , b , and c *really* mean. He scarcely ventures to utter it, yet he can but wonder how much more perplexed he is soon to be when he comes to the *real* unknown quantities— x , y , and z ; and inwardly congratulates himself that his income was not announced in such unintelligible terms as these. The truth is, he has been accustomed only to the *definite* symbols, 1, 2, 3, 4, etc., to which one and only one value is attached. The symbol 5 is *known*, because it everywhere means

(1) SYSTEMATIC HUMAN PHYSIOLOGY, ANATOMY, AND HYGIENE; being an Analysis and Synthesis of the Human System, with practical conclusions. With many new and complete illustrations. By T. S. LAMBERT, M. D. New York: William Wood & Co., 1865. 12mo, pp. 420. \$1.25.

five—five apples, five dollars, five units, five tens, five hundreds, and never any thing else. Although he has cast the interest on more than a hundred different *given* or *known* sums of money, and has repeated the same steps as many times, yet it has never occurred to him that he might put *once for all*, for these ever-recurring *known* principals, some *vague* or *indefinite* symbol, as *a*, identical in meaning with the words, *the given principal*, and cast the interest on that, thus disposing of every individual case by *one*, and that a sort of wholesale process. The symbol *a* is known, not because it has a definite value, like 1, 2, 3, but because it holds in this example the place where a known number must stand, in *any* particular case. It therefore becomes an expression of an *idea* equivalent to the phrase, *the given number used as principal*. It should be so interpreted both *alone* and in its *combination* with other expressions, just as we interpret expressions in common language.

But, what is worse, the using of these symbols for *quantity* at the outset is most unfortunate. The definite symbols 1, 2, 3, 4 are entirely sufficient for the first steps. Moreover, they are familiar to the learner. We can commence with what he already knows, and thus not perplex him with too many new and strange things at once. The fundamental idea in algebra is the distinction between *equality* and *inequality*. When we compare 4 with 4, the mind gives its entire assent to the proposition—they are equal. So when we compare 4 with 3, any child *perceives* that they are unequal. Here the mind has complete assurance. But when we compare *a* with *b*, the old difficulty is revived. How do I know that *a* is greater than *b*, is equal to *b*, or is less than *b*? And yet, in the elementary books, equations, such as $m = b + c$, are given in the very outset. The truth is, to a beginner there is something mysterious in the statement that *m* is equal to $b + c$. He can not comprehend it. It involves *tacitly* the postulate, "Let us regard *m* as such a quantity that it shall be equal to the sum of the two quantities, *b* and *c*, taken together." This idea of proceeding by a *tacit* agreement, by a *common consent*, to one who knows, without any such resort, that 10 equals 10, is *new* and *perplexing*; but, alas! too often escapes the attention of the teacher, who should show that one is a *realized* equation, while the other is one only by *mutual consent*.

Beginning, then, with definite numbers, we can illustrate the equality or inequality of two quantities, introduce in their appropriate places the symbols designed to take the place of the often-recurring phrases, *equal to*, *greater than*, *less than*, and thereby make sure a second step in our elementary work. The pupil is now prepared to see that one number, as 12, may be compared with *two* others combined. Thus $12 = 7$ and 5 taken together, or $12 = 18$ diminished by

6. Here, again, he will soon see the advantage of condensing by employing some sign, as $+$ instead of the words *taken together*, or $-$ instead of *diminished by*. This third elementary step prepares the way to distinguish *terms* in an algebraic expression, some being *plus* and some *minus*.

The learner is prepared to appreciate the next step, which consists in *operations* upon equal quantities. By using numbers instead of letters, the equal quantities resulting from the addition of equals to equals, and the subtraction, multiplication, or division of such numbers, is at once realized. And, besides, the way is prepared to appreciate the same operations when abstract and indefinite terms are employed. Here, too, is the time to show how symbols may take the place of common language in expressing an *unknown* term. Thus, in common language, we should say, "What number added to seventeen will amount to twenty-five?" Translating this question into the language of symbols, so far as we are able, we have, $17 + \text{what number} = 25$. The learner readily sees the need of some symbol to make the translation complete; and the teacher has only to suggest *x* as a suitable one to take the place and meaning of *What number*, to turn the original question wholly into the language of symbols. Thus we have $17 + x = 25$, and 17 being subtracted from each of these equal quantities, leaves still the equals *x* and 8, which makes known the value of *x*.

- The *primary* points in all this work are—
- (1) In every step, appeals are made directly to the learner's *intelligence*. He *appreciates* every process.
 - (2) *One thing* at a time, and just *that one* which is needed is brought forward.
 - (3) By beginning at the *fundamental* idea of equality and inequality, nothing is *anticipated*. No *unexplained* thing is employed to elucidate another alike unexplained.
 - (4) Algebra is made to appear what it really is—a *language of symbols*. Each *term* and each *sign* has its appropriate significance, and a sentence in symbols can readily be translated into a sentence in *common language*.
 - (5) The way is opened directly, and by easy gradations, to the more abstract and comprehensive symbols which represent quantities indefinitely, and to the more complex combinations of these symbols which carry the learner to the loftiest conceptions of quantity.

No book can supply the place of a *living, appreciative* teacher. The learner's *real want* must be understood, and met at every point. This none can do who have acquired merely a book knowledge of the subject. Yet there is a preference in text-books. Of all we have examined—and the number is not small—none seem to us to have met the want of the beginner so well as Bailey's re-

vised edition.* This little book was evidently designed to meet the wants of the uninitiated, and to carry them on by easy steps to a practical knowledge of the subject. We like the spirit of the book. It is evidently prepared by one alike in sympathy with the subject, and in sympathy with the pupil's needs. It begins where the subject begins. It commences at a *single* point, and clears off every thing that obscures the learner's vision. It proceeds by regular gradations. It regards the whole subject as a language, and requires a careful interpretation of its parts. The processes are direct and simple, the principles are stated as the *translation* of results previously reached, and not as an arbitrary combination of the parts, which, though correct, do not spring directly from a previous analysis. It is simple enough for even a child, yet sufficiently extended to meet the wants of the young man preparing for the university.

Formerly all new books, except the most ephemeral novels, were presented in a style of binding, etc., which, while making the books durable and handsome, had the effect of making them unobtainable to many on account of the cost. We are glad to see the exceptions to this rule, which are now frequently occurring, and to perceive that there is an evident tendency to make our current literature available to the public. In New York, Messrs. Bunce and Huntington are publishing an interesting series of poems, in neat volumes of about one hundred pages each, illustrated and well printed, at thirty cents a volume. Whittier's patriotic lyrics¹ have been issued in Boston, in a similar series. The volume contains forty of his poems, evoked by events ranging in time from the period of the Texan excitement to the present day. Patriotic verses are generally a poor sort of literature. Some of Whittier's are not exceptions to the rule; but generally they are interesting, even when not faultless. The allusions to music are un felicitous. When we read of

The quaint relief of mirth that plays
With sorrow's minor keys,

we can not help wondering whether the good Quaker poet imagines the *minor key* to be something visible and tangible, like the keys of a bookcase, flute, or piano. Our opinion of his musical science is not enhanced, and our regard for his literary taste is lessened, by the quaint jumble in which the next musical allusion occurs:

So shall our voice
Of sovereign choice
Swell the deep base of duty done,

(2) FIRST LESSONS IN ALGEBRA, for Schools and Academies. By EMMERICH BAILEY. Revised Edition. New York, Philadelphia, and Chicago: Schermerhorn, Bancroft & Co. \$1.00.

(3) NATIONAL LYRICS. By JOHN GREENLEAF WHITTIER. With Illustrations, by George G. White, H. Fenn, and Charles A. Barry. Boston: Ticknor & Fields, 1862. Paper; Hmo, pp. 104; 50 cts.

And strike the key
(If time to be,
When God and man shall speak as one!

But, "for all that," Whittier has some ideas of musical time, as all his poems prove. And as to literary excellence, the following extract, "written on learning the terms of the treaty with Mexico," will atone for a good many specimens of faults which seem almost unavoidable in "national lyrics:"

Great spaces yet untraveled, great lakes whose mystic shores
The Saxon rifle never heard, nor dip of Saxon oars;
Great herds that wander all unwatched, wild steeds that none have tamed;
Strange fish in unknown streams, and birds the Saxon never named;
Deep mines, dark mountain crannies, where Nature's chemic powers
Work out the Great Designer's will,—all these ye say are ours!

Forever ours! for good or ill, on us the burden lies;
God's balance, watched by angels, is hung across the skies.
Shall justice, truth, and freedom, turn the poised and trembling scale?
Or shall the evil triumph, and robber wrong prevail?
Shall the broad land o'er which our flag in starry splendor waves,
Forego through us its freedom, and bear the tread of slaves?

The day is breaking in the East, of which the prophets told,
And brightens up the sky of time, the Christian age of gold:
Old Might is Right is yielding, battle blade to clerical pen,
Earth's monarchs are her peoples, and her serfs stand up as men;
The isles rejoice together, in a day are nations born,
And the slave walks free in Tunis, and by Stamboul's Golden Horn!

The Crisis presses on us face to face with us it stands
With solemn lips of question, like the Sphinx in Egypt's sands!
This day we fashion destiny, our web of fate we spin,
This day for all hereafter choose we holiness or sin;
Even now from starry Gerizim, or Ebal's cloudy crown,
We call the dows of blessing or the bolts of cursing down!

Fine fabrics in unskillful hands, foundation stones disposed by a blundering architect, an important enterprise with an incompetent director,—what painful sights are these! Yet the noblest moral enterprise which has recently been essayed, the writing of a single volume,⁴ which should disclose the bases of ignorance and superstition, and reveal for practical, popular view the laws of mind, and the constitution of the universe, has manifestly been undertaken by one alike unskillful, blundering, and incompetent. We surely censure without prejudice, for our sympathies are with the author. Much of what he asserts we have in various ways inculcated. Some views which we have expressed receive here the most unreserved acceptance,—even to the extent of being

(4) THE PHILOSOPHIC AND SCIENTIFIC ULTIMATUM, written in the Constitution and Laws of the Universe. By W. A. ALLINGHAM. New York: Published by the Author. 12mo, pp. 430; \$1.50.

incorporated into the work, in our own language, without query, quotations, or credit! Even if all his views were concurrent with our own, we would not willingly see them supported by the flimsy arguments and false ratiocination which characterize the work. The assurance with which the author entitles his book "The Ultimatum" of science is excusable, for the reformer must be courageous, and courage may be mistaken for audacity. But the building up of philosophy by filleting the feints and figments of fancy, is unpardonable.

Are we querulous? See the facts!

The author's purpose is, first, to overcome the ignorance and superstition which he declares prevail throughout the world. But in reality he merely points to certain errors, without even attempting to prove their real character. The very persons who most need help,—they who hold these errors,—are in no way benefited. A finger is raised as an index, when in reality a sturdy arm is needed, and a vigorous blow should be struck. Next, in attempting to establish a scientific basis of thought, our author begins by repeating the identical error which he denounces in others as the support of ignorance—treating conventional ideas as substantial truths, and mere dictums as data. Thus, we are told that "space is filled with the elements of two substances." But if space is not filled with the elements of *all* substances, as is at least equally probable, why not prove the restriction to two? Again, "matter" we are told, "comprehends all particled or molecular substance," while "life is unparticled substance;" and yet it is declared that life permeates and exists between the molecular parts of matter, in which it inheres! Now, if life *inheres* in atoms, it is itself in particles; and the definition is false; moreover, if life inheres in atoms, it can not "exist between" atomic particles. We have here an egregiously inconsistent medley of dogmatic errors.

With similar specimens of philosophy meeting us at almost every page, are we unjustifiably harsh in making an especial application of the author's assertion that "ignorance everywhere is essentially the same," and in suggesting that he himself constitutes an interesting illustration of the truthfulness of his statement?

"Infinite riches in a little room," would be an un felicitous quotation in most books. It is the fault of modern publications as well as of older works, that they are too bulky and pretentious. Too much is said; too little told. The Cottage Library series is likely to be a model of condensation. The first number¹ consists of selections from American poets. A few of these have already been too often appropriated in similar

collections.—The Old Oaken Bucket, and Woodman Spare that Tree, for example, have become commonplace and uninteresting, in consequence of too frequent republication. Poe is represented by Annabel Lee, a pleasing, popular poem, which exhibits its author's recklessness and inconsistency; for it is irregular in form, and is constructed in opposition to rules which he himself required others to observe. But among the selections are Whittier's Maud Muller, Longfellow's Village Blacksmith, Bayard Taylor's Quaker Widow, and Alice Carey's Ballad of Jessie Carol, which more correctly show the character of the compilation. It is a good collection, is well printed, and should have many readers.

The interesting chronicles of Kansas have assumed the form of substantial history, in a work² which treats of its discovery, geography, soil, rivers, climate, products, its early settlement and organization, and its later eventful history. The author, during his official connection with Governor Geary, had unusual opportunities for acquiring information, and has communicated it with evident candor and impartiality.

The latest educational novelty is a graduated series of composition papers, for primary and academic use.³ We are indebted for them to the Rev. George T. Rider, A. M., an experienced and successful teacher, now rector of Cottage Hill Seminary for Ladies, Poughkeepsie, N. Y. The plan of the undertaking is so simple, yet of such obvious utility, that we are puzzled to understand how it could have remained so long undeveloped. It undertakes a classification of pupils in English composition, while securing a thorough and intelligent correction of all errors, *by the pupil*, through the use of successive papers, very skillfully made to cover the whole ground of grammatical and rhetorical exercise. The main principle embodied in these papers seems to us vital, and worthy of all commendation. It is this: "That the pupil, and not the teacher, should correct the composition;" that it is the province of the teacher to indicate the nature of the error, while the pupil shall make the correction—a process which involves on his part an examination and analysis of the principle or usage violated.

Under the old method, the teacher passes weary and almost profitless hours every week, in writing out corrections that may not be intelligible to the pupil, even if he takes the pains to read them. At the head of these papers is a complete and clearly worded table of usages, rules, and laws,

(6) GIBSON'S HISTORY OF KANSAS. With illustrations. By JOHN H. GIBSON, M. D., Secretary to the Governor. Cens. publisher. 12mo, pp. 543.

(7) PRIMARY AND ACADEMIC COMPOSITION PAPERS. SERIES. New York, Philadelphia, and Chicago: Schenckhorn, Bancroft & Co. Specimen sheets by mail, five cents each.

(5) HOME BALLADS. By Our Home Poets. With illustrations, by Darley. New York: Bunce & Huntington. 12mo. Paper, pp. 96; 30 cts.

which are liable to neglect, each numbered or lettered. The work of the teacher consists in underlining or bracketing the faulty words; placing its proper symbol in the margin, which directs the pupil to the proper item in the table; so that, at leisure, he can make the examination and correction.

The pupil, in this exercise, is made technically and thoroughly familiar with the usages and requirements of good English.

The labor which these papers will save teachers is most important, while the discipline of composition will be reduced to something like an orderly and scientific method. We are confident that this series will meet a general and enthusiastic welcome.

A book entitled *Worship in the School-room** is now in press, and will be

(*) Address Rev. W. J. Wylie, 54 North Sixth street, Philadelphia; or, Schermershorn, Bancroft & Co., 130 Grand street, New York.

issued early in autumn. Each page furnishes a complete lesson adapted to the devotional services of the school-room, and contains music, hymns, and selections of Scripture, which cluster around some doctrine or duty, illustrating and enforcing it. The work can not fail to interest and instruct pupils in whose hands it may be placed.

One edition of the work is in preparation, which has prayers interlarded with the lessons. These prayers have been prepared by eminent ministers and leading religious educators of all evangelical churches in various parts of the land, each person furnishing a prayer for the lesson placed in his hands.

The book will present a collection of more than two hundred and fifty prayers, contributed by leading, eminent, and efficient workers in the cause of education. The mechanical execution of the book promises to be very complete and attractive.

MISCELLANY.

— If a train, moving at the rate of twenty-five miles an hour were stopped instantaneously, the passengers would experience a concussion equal to that of a body falling from a height of nineteen feet; they would be hurled against the sides of the car with a force equal to that which they would be exposed to in falling from a window on the second floor of a house. If the train were moving at the rate of thirty miles an hour, they might as well fall from a height of three pair of stairs; and an express train would, virtually, make them fall from a fourth story. "Instantaneous brakes," therefore, are not so desirable as has been supposed.

— Mr. Charles Lanman writes that while preparing his "Dictionary of Congress" for publication in 1858, he forwarded to Mr. Lincoln the usual request for a sketch of his life, and received the following reply:

Born February 12, 1809, in Hardin county, Kentucky.

Education, defective.

Profession, a lawyer.

Have been a captain of volunteers in the Black Hawk war.

Postmaster at a very small office.

Four times a member of the Illinois Legislature.

And was a member of the lower house of Congress.

Yours, &c.,

A. LINCOLN.

— The Indians in Wisconsin, who have just received their annuities, call the fractional paper currency "papoose money."

— Mr. Douglas, in his great debate with Mr. Lincoln, accused him of tending bar, alluding to his keeping a grocery store. "True," said Mr. Lincoln, "the judge and I have both tended bar—I on the inside, he on the outside."

— A well-known lawyer in Boston had a horse that always refused to cross the mill-dam bridge leading out of the city. No whipping, no urging would carry him over without stopping. So he advertised him, "To be sold for no other reason than that the owner wants to go out of town."

— A reptile, unknown to Australian naturalists, has been found in New South Wales, in a tank of rain-water. It measured three feet in length, and was in no place thicker than the smallest description of whipcord. It was as hard as iron, slipping from between a pair of pincers, apparently without injury. Under a powerful magnifying glass the head appeared to resemble that of a leech.

— Of the 109 schools for boys, in Paris, 46 are kept by members of the religious fraternities; and of the 111 for girls, as many as 56 by the sisters of Catholic communities. Forty-four new educational establishments have been authorized within the present year.

— The most laconic will on record is that of a man who died in 1769. It ran thus: "I have nothing; I owe a great deal; the rest I give to the poor."